

STIC-Biotech/ChemLib

From: Hunt, Jennifer
Sent: Wednesday, February 06, 2002 7:28 PM
To: STIC-Biotech/ChemLib
Subject: Seq Search for 09/480,977

Please search and interference search SEQ ID NO:4 of 09/480,977.

Thanks.

Jennifer Hunt
Patent Examiner, Art Unit 1642
CM1-8D06 (mailbox 8E12)
(703)308-7548

Edward Hart
Technical Info Specialist
STIC/Biotech
CM1 1642 Tel: 303-9203

Searcher: _____
Phone: _____
Location: _____
Date Picked Up: *2/7/02*
Date Completed: *2/7/02*
Searcher Prep/Review: _____
Clerical: _____
Online time: _____

TYPE OF SEARCH:
NA Sequences: _____
AA Sequences: _____
Structures: _____
Bibliographic: _____
Litigation: _____
Full text: _____
Patent Family: _____
Other: _____

VENDOR/COST (where applic.)
STN: _____
DIALOG: _____
Questel/Orbit: _____
DRLink: _____
Lexis/Nexis: _____
Sequence Sys.: *Q2*
WWW/Internet: _____
Other (specify): _____

OM protein - protein search, using SW model						
Run on: February 7, 2002, 12:56:46 : Search time 12.54 Seconds						
Scoring table: BLOSUM62						
Title: US-09-480-977-4	Perfect score: 277	Sequence: 1 HKFPCRDKDILAYCLNDGCF. SHKHCRCKBGGYGVRCDFL 47	Scoring table: BLOSUM62	Searched: 212252 seqs, 2203292 residues	Post-processing: Minimum Match 0%	total number of hits satisfying chosen parameters: 212252
Minimum DB seq length: 0	Maximum DB seq length: 200000000	Maximum Match 0%	Maximum Match .100%	Listing first 45 summaries		
Database : Issued_Patents_AA.*						
1: /cgn2_6/ptodata/2/1aa/5A_COMB.pep:*	2: /cgn2_6/ptodata/2/1aa/5B_COMB.pep:*	3: /cgn2_6/ptodata/2/1aa/6A_COMB.pep:*	4: /cgn2_6/ptodata/2/1aa/6B_COMB.pep:*	5: /cgn2_6/ptodata/2/1aa/PTCUS_COMB.pep:*	6: /cgn2_6/ptodata/2/1aa/backfiles1.pep:*	
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution..						
SUMMARIES						
Result No.	Score	Query Length	DB ID	Description		
				Match	DB	ID
1	277	100.0		47	3	US-08-899-437-4
2	277	100.0		47	3	US-08-899-437-8
3	277	100.0		47	4	US-09-126-121-4
4	277	100.0		47	4	US-09-126-121-8
5	277	100.0		360	4	US-09-126-121-7
6	277	100.0		360	3	US-08-899-437-3
7	277	100.0		362	3	US-08-899-437-6
8	277	100.0		482	4	US-09-126-121-3
9	277	100.0		496	3	US-08-899-437-23
10	277	100.0		696	4	US-09-126-121-23
11	277	100.0		713	3	US-08-899-437-2
12	277	100.0		713	4	US-09-126-121-2
13	277	100.0		720	3	US-08-899-437-6
14	277	100.0		720	4	US-09-126-121-6
15	16.5	42.1		52	1	US-08-417-640A-1
16	16.5	42.1		52	1	US-08-7-60-815-1
17	16.5	42.1		52	2	US-08-7-61-038-1
18	16.5	42.1		52	3	US-09-238-182-1
19	113.5	41.0		49	3	US-08-899-437-14
20	113.5	41.0		49	4	US-09-126-121-14
21	113.5	41.0		50	3	US-08-753-007A-12
22	113.5	41.0		50	4	US-09-398-496-12
23	113.5	41.0		52	1	US-09-417-640A-3
24	113.5	41.0		52	1	US-08-7-60-815-3
25	113.5	41.0		52	2	US-08-7-61-038-3
26	113.5	41.0		54	1	US-08-17-481-11
27	113.5	41.0		63	3	US-08-341-018-62

28	113.5	41.0	63	4	US-08-470-335-221	Sequence 221, App
29	113.5	41.0	63	4	US-08-470-339-221	Sequence 221, App
30	113.5	41.0	66	1	US-08-474-743B-10	Sequence 10, Appl
31	113.5	41.0	66	1	US-08-456-201-10	Sequence 10, Appl
32	113.5	41.0	66	2	US-08-456-241-10	Sequence 10, Appl
33	113.5	41.0	66	4	US-09-020-880-2	Sequence 2, Appl
34	113.5	41.0	66	5	PCT-US92-04295A-10	Sequence 10, Appl
35	113.5	41.0	83	3	US-08-310-018-70	Sequence 70, Appl
36	113.5	41.0	83	4	US-08-410-333-225	Sequence 225, App
37	113.5	41.0	83	4	US-08-470-339-225	Sequence 225, App
38	113.5	41.0	88	3	US-08-331-018-68	Sequence 68, Appl
39	113.5	41.0	88	4	US-08-470-333-224	Sequence 224, App
40	113.5	41.0	88	4	US-08-470-339-224	Sequence 224, App
41	113.5	41.0	95	1	US-08-484-743B-14	Sequence 14, Appl
42	113.5	41.0	95	1	US-08-456-201-14	Sequence 14, Appl
43	113.5	41.0	95	2	US-08-330-161-12	Sequence 12, Appl
44	113.5	41.0	95	2	US-08-450-241-14	Sequence 14, Appl
45	113.5	41.0	95	2	US-08-440-401-12	Sequence 12, Appl

RESULT : 1
US-08-999-437-4
Sequence: 4 Application US/08899437
Patent No. 6,121415
GENERAL INFORMATION:
APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech, Inc.
STREET: 1 DNA Way
CITY: South San Francisco
STATE: California
COUNTRY: USA
ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genentech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,437
FILING DATE: 24-Jul-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Conley, Deirdre L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1
TELECOMMUNICATION INFORMATION: —
TELEPHONE: 650/725-2066
TELEFAX: 650/52-9881
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: Amino Acid
TOPOLOGY: Linear
FEATURE:
NAME/KEY: NRG3 EGF-like domain/amino acid seq.
LOCATION: 1-47
IDENTIFICATION METHOD:
OTHER INFORMATION:
US-08-899-437-4

Query Match 100.0% Score 277; DB 3; Length 47;
Best Local Similarity 100.0%; Pred. No. 1.2e-26;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0
1 HFKPCRDKDLYCLNDGECFFVIELTGSKHKRCRKEGYQCVRCDOFL 47

Db 1 |||||||HFKPCRDKDLYCLNDGECFVIETLGSNSHRCRCKEGIQGVRCDOFL 47

RESULT 2

Sequence 8, Application US/08899437

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: Erbb Receptor-Specific Neuropilin Related
NUMBER OF SEQUENCES: 23
TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Delinde L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 4:

SEQUENCE CHARACTERISTICS:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

FEATURE: NRG3 EGR-like domain/amino acid seq.

NAME/KEY: NRG3 EGR-like domain/amino acid seq.

LOCATION: 1-47
TOPOLOGY: Linear

ZIP: 94080
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121
FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Delinde L.
REGISTRATION NUMBER: 36,487
REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066
TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 4:

SEQUENCE CHARACTERISTICS:

NAME/KEY: NRG3 EGR-like domain/amino acids
LENGTH: 47 amino acids
TYPE: Amino Acid

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

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NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

FEATURE:

NAME/KEY: NRG3 EGR-like domain/amino acid seq.
LOCATION: 1-47
TOPOLOGY: Linear

LENGTH: 47 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:
 NAME/KEY: NRG3 EGF-like domain/amino acid seq.
 LOCATION: 1-47
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-8

Query Match 100.0%; Score 277; DB 4; Length 47;
 Best Local Similarity 100.0%; Pred. No. 1 2e-26; Mismatches 0; Indels 0; Gaps 0;

RESULT 5
 US-08-899-437-7
 Sequence 7, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Winatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-JUL-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deidre L.
 REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 360 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:

NAME/KEY: hNRG3 extracellular domain/Amino Acidseq
 LOCATION: 1-360
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-7

RESULT 7
 US-08-899-437-3
 Sequence 3, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

Query Match 100.0%; Score 277; DB 3; Length 360;
 Best Local Similarity 100.0%; Pred. No. 9.6e-26; Mismatches 0; Indels 0; Gaps 0;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OTHER INFORMATION:
 US-08-899-437-7

RESULT 5
 US-08-899-437-7
 Sequence 7, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
 COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: Winatin (Genentech)

CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/09/126,121
 FILING DATE: 30-JUL-1998
 CLASSIFICATION:
 ATTORNEY/AGENT INFORMATION:
 NAME: Conley, Deidre L.
 REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1
 TELECOMMUNICATION INFORMATION:
 TELEPHONE: 650/225-2066
 TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 7:
 SEQUENCE CHARACTERISTICS:
 LENGTH: 360 amino acids
 TYPE: Amino Acid
 TOPOLOGY: Linear
 FEATURE:

NAME/KEY: hNRG3 extracellular domain/Amino Acidseq
 LOCATION: 1-360
 IDENTIFICATION METHOD:
 OTHER INFORMATION:
 US-09-126-121-7

RESULT 7
 US-08-899-437-3
 Sequence 3, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

Query Match 100.0%; Score 277; DB 3; Length 360;
 Best Local Similarity 100.0%; Pred. No. 9.6e-26; Mismatches 0; Indels 0; Gaps 0;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 5
 US-08-899-437-7
 Sequence 7, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

Query Match 100.0%; Score 277; DB 3; Length 360;
 Best Local Similarity 100.0%; Pred. No. 9.6e-26; Mismatches 0; Indels 0; Gaps 0;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 7
 US-08-899-437-3
 Sequence 3, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

Query Match 100.0%; Score 277; DB 3; Length 360;
 Best Local Similarity 100.0%; Pred. No. 9.6e-26; Mismatches 0; Indels 0; Gaps 0;

RESULT 5
 US-08-899-437-7
 Sequence 7, Application US/08899437

GENERAL INFORMATION:
 PATENT NO. 6121415

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
 TITLE OF INVENTION: ErBB Receptor-Specific Neuropilin Related
 NUMBER OF SEQUENCES: 23
 CORRESPONDENCE ADDRESS:
 ADDRESSEE: Genentech, Inc.
 STREET: 1 DNA Way
 CITY: South San Francisco
 STATE: California
 COUNTRY: USA
 ZIP: 94080

COMPUTER READABLE FORM:
 MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible
 OPERATING SYSTEM: PC-DOS/MS-DOS
 SOFTWARE: WinPatin (Genentech)
 CURRENT APPLICATION DATA:
 APPLICATION NUMBER: US/08/899,437
 FILING DATE: 24-Jul-1997
 CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 362 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: mNRG3 extracellular domainAmino acid seq

LOCATION: 1-362

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-09-126-121-3

Query Match 100.0%; Score 277; DB 3; Length 362;
 Best Local Similarity 100.0%; Pred. No. 9, 6e-26;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCRDKDYLAYCLNDGEFVIELTGSKHKCRCKEGYQQVRCDOFL 47

Db 288 HFKPCRDKDYLAYCLNDGEFVIELTGSKHKCRCKEGYQQVRCDOFL 334

RESULT 9

US-09-899-437-23

Sequence 23, Application US/08899437

Patent No. 6121415

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: EBB Receptor-Specific Neuropilin Related

TITLE OF INVENTION: Ligands and Uses Therefor

NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:
 COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: WinPatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/899,437

FILING DATE: 24-Jul-1997

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 362 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 362 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/722-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEQ ID NO: 3:

SEQUENCE CHARACTERISTICS:

LENGTH: 696 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

Sequence 23, Application US/09126121

Patent No. 6,520,501

GENERAL INFORMATION:

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

NUMBER OF SEQUENCES: 23

TITLE OF INVENTION: Ligands and Uses Therefor

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121

FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/932-9881

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 713 amino acids

TOPOLOGY: Linear

FEATURE:

NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.

TYPE: Amino Acid

LOCATION: 1-713

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-08-899-437-2

RESULT 12

US-09-126-121-2

Query Match 100.0%; Score 277; DB 4; Length 696;

Best Local Similarity 100.0%; Pred. No. 1.9e-25;

Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HKPCKRDKLAYCLNDGECFVIETLGSHKHCKCKEGYQGVRCQDFL 47

Db 288 HKPCKRDKLAYCLNDGECFVIETLGSHKHCKCKEGYQGVRCQDFL 334

RESULT 11

US-08-899-437-2

Sequence 2, Application US/09126121

GENERAL INFORMATION:

Patent No. 6,520,501

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao

TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related

NUMBER OF SEQUENCES: 23

TITLE OF INVENTION: Ligands and Uses Therefor

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121

FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/225-2066

TELEFAX: 650/932-9881

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 713 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: Mouse NRG3 (mNRG3)/amino acid seq.

LOCATION: 1-713

IDENTIFICATION METHOD:
OTHER INFORMATION:
US-09-126-121-2

APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
TITLE OF INVENTION: ERBB Receptor-Specific Neuregulin Related
TITLE OF INVENTION: Ligands and Uses Therefor
NUMBER OF SEQUENCES: 23

CORRESPONDENCE ADDRESS:

ADDRESSEE: Genentech, Inc.

STREET: 1 DNA Way

CITY: South San Francisco

STATE: California

COUNTRY: USA

ZIP: 94080

COMPUTER READABLE FORM:

MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Winpatin (Genentech)

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/126,121

FILING DATE: 30-Jul-1998

CLASSIFICATION:

ATTORNEY/AGENT INFORMATION:

NAME: Conley, Deirdre L.

REGISTRATION NUMBER: 36,487

REFERENCE/DOCKET NUMBER: P1084R1D1

TELECOMMUNICATION INFORMATION:

TELEPHONE: 650/952-2066

TELEFAX: 650/952-9881

INFORMATION FOR SEO ID NO.: 6:

SEQUENCE CHARACTERISTICS:

LENGTH: 720 amino acids

TYPE: Amino Acid

TOPOLOGY: Linear

FEATURE:

NAME/KEY: hNRG3B1 amino acid sequence

LOCATION: 1-720

IDENTIFICATION METHOD:

OTHER INFORMATION:

US-09-126-121-6

Query Match 100.0%; Score 277; DB 4; Length 720;
Best Local Similarity 100.0%; Pred. No. 1.9e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 15

US-08-417-640-A-1

Sequence 1, Application US/08417640A

Patent No. 5670342

GENERAL INFORMATION:

APPLICANT: Carnahan, Josette F.

APPLICANT: Hara, Shinichi

APPLICANT: Lu, Hsieng S.

APPLICANT: Mayer, John P.

APPLICANT: Yoshinaga, Steven K.

TITLE OF INVENTION: NDF Peptides

NUMBER OF SEQUENCES: 5

CORRESPONDENCE ADDRESS:

ADDRESSEE: Amgen Inc.

STREET: 1840 Devalilland Drive

CITY: Thousand Oaks

STATE: California

COUNTRY: USA

ZIP: 91320

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PatentIn Release #1.0, Version #1.25

Query Match 100.0%; Score 277; DB 4; Length 713;
Best Local Similarity 100.0%; Pred. No. 1.9e-25;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 14

US-09-126-121-6

Sequence 6, Application US/09126121
Patent No. 6255051

GENERAL INFORMATION:

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/417,640A

FILING DATE:

CLASSIFICATION: 4336

ATTORNEY/AGENT INFORMATION:

NAME: Mazza, Richard J.

REFERENCE/DOCKET NUMBER: A-310

INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:

LENGTH: 52 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

US-08-417-640A-1

Query Match 42.1%; Score 116.5; DB 1; Length 52;

Best Local Similarity 33.3%; Pred. No. 1.7e-07;

Matches 16; Conservative 15; Mismatches 16; Indels 1; Gaps 1;

QY 1 HFKPCRDQLAYCLNDGSCFVLIETLTSKHK-CRCKSCYQGVRCDDPL 47

DB 2 HLYKCAERKTFCVNGGCCPMVRLDSNPSRYLCKCQPGFTGARCONIV 49

Search completed: February 7, 2002, 13:00:10
Job time: 204 sec

PT	16-JUN-1998;	98MO-US12403.
XX		
PS	Claim 30; Page 64; 101pp; English.	
XX		
CC	This is the epidermal growth factor (EGF)-like domain of human neuregulin related ligand NRG3 (see also AAW97618), a novel member of the EGF-like family of protein ligands that binds to the Erbb4 receptor and activates Erbb4 receptor tyrosine phosphorylation.	
CC	The EGF-1 like domain of NRG3 is distinct from the EGF-like domains of NRG1 and NRG2.	
CC	The invention provides human and murine polypeptides (see also AAW97617) that have at least 75% homology to the NRG3 EGF-like domain, as well as expression vectors, host cells and methods for the recombinant production of novel NRG3s. The NRG3 polypeptides and polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having the Erbb4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial cells (e.g. multiple sclerosis). They can be used to treat patients whose nervous system has been damaged by e.g. trauma, surgery, stroke, ischaemia, infection, metabolic disease, nutritional deficiency, malignancy, or toxic agents. NRG3 can also be used to treat motor neuron disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, down's syndrome, nerve deafness, and Meniere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's disease, meachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas syndrome, to treat disease of skeletal muscle of smooth muscle, such as muscular dystrophy or diseases caused by skeletal or smooth muscle wasting. The products can also be used for detection, diagnosis, for the production of transgenic or knockout animals or for drug screening. A claimed immunoadhesin comprises the human NRG3 EGF-like domain fused to an immunoglobulin sequence.	
XX	Sequence 47 AA;	
SQ	100.0%; Score 277; DB 20; Length 47; Best Local Similarity 100.0%; Pred. No. 1.7e-21; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	
QY	1 HFKPCRDKDYLAYCUNDGECFVIELTGTGSKHKCRCKEGOGYGRCDQFL 47	
Db	1 hfkpccrdkdylaycndgecfvietltgtgskhkcrckegyqgrcdqfl 47	
RESULT 2		
ID	AAW97621 standard; Protein; 157 AA.	
XX		
AC	AAW97621;	
XX		
DT	10-MAY-1999 (first entry)	
XX		
DE	Human neuregulin related ligand NRG3 extracellular domain.	
XX		
KW	Neuregulin related ligand; NRG3; hNRG3B1; human; Erbb4 receptor; signal transduction; nervous system disorder; neurodegeneration; neuropathy; therapy; diagnosis.	
XX		
OS	Homo sapiens.	
XX		
PN	WO9902681-A1.	
XX		
PD	21-JAN-1999.	
XX		
DT	06-JUL-1999 (first entry)	
XX		
DE	Human heregulin-like factor sequence.	
XX		
KW	Human heregulin-like factor; HLF; cell growth regulator; diagnosis; neural system disorder; cancer.	
XX		
OS	Homo sapiens.	
XX		
PN	WO9957989-A1.	
XX		
PD	23-DEC-1998.	
XX		
PT	New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome	

XX
PS Claim 5(a); Page 69-70; 101pp; English.
XX
CC This is the extracellular domain (ECD, aai-360 of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the
epidermal growth factor (EGF)-like family of protein ligands. NRG3
activates ErbB4 receptor tyrosine phosphorylation. The invention
provides human and murine polypeptides (see also AAW97617) that have
at least 75% homology to the NRG3 ECD, as well as expression vectors,
host cells and methods for the recombinant production of novel
NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
enhance the survival, proliferation or differentiation of cells
having the ErbB4 receptor in vivo and in vitro. They can be used to
prevent or treat damage to a nerve or damage to other NRG3-expressing
or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In
particular, they can be used to treat diseases which involve neural
cell growth such as demyelination, or damage or loss of glial cells
(e.g. multiple sclerosis). They can be used to treat patients whose
nervous system has been damaged by e.g. trauma, surgery, stroke,
ischaemia, infection, metabolic disease, nutritional deficiency,

Query Match 100 %; Score 277; DB 20; Length 360;
Best Local Similarity 100 %; Pred. No. 1.1e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 HFKPCRDKDILAYCLNDGECVIEETLGSHKRCRCKEGYQGVRCDDFL 47
Db 286 hfkpcrdkdlayclndgecvietltgshkrcrckegyqgvrcddfl 332

PR 09-JUL-1997; 97US-0052019.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products
for treating nervous system disorders, e.g. stroke, ischaemia,
infection, malignancy, Alzheimer's disease or Down's syndrome
XX
PS Claim 5(a); Page 62-63; 101pp; English.
XX
CC This is the extracellular domain (ECD, aai-362) of murine neuregulin
CC related ligand NRG3 (see also AAW97617), a novel member of the
epidermal growth factor (EGF)-like family of protein ligands. NRG3
binds to the ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor,
activates ErbB4 receptor tyrosine phosphorylation. The invention
provides human and murine polypeptides (see also AAW97618) that have
at least 75% homology to the NRG3 ECD, as well as expression vectors,
host cells and methods for the recombinant production of novel
NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
enhance the survival, proliferation or differentiation of cells
having the ErbB4 receptor in vivo and in vitro. They can be used to
prevent or treat damage to a nerve or damage to other NRG3-expressing
or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In
particular, they can be used to treat diseases which involve neural
cell growth such as demyelination, or damage or loss of glial cells
(e.g. multiple sclerosis). They can be used to treat patients whose
nervous system has been damaged by e.g. trauma, surgery, stroke,
ischaemia, infection, metabolic disease, nutritional deficiency,

RESULT 4
AAW97620

ID AAW97620 standard; Protein; 362 AA.
XX
AC AAW97620;
XX
DT 10-MAY-1999 (first entry)

XX
DE Mouse neuregulin related ligand NRG3 extracellular domain.
XX
KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
OS Mus sp.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US13411.
XX
PR 24-JUL-1997; 97US-0899437.

PR 09-JUL-1997; 97US-0052019.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products
for treating nervous system disorders, e.g. stroke, ischaemia,
infection, malignancy, Alzheimer's disease or Down's syndrome
XX
PS Claim 5(a); Page 62-63; 101pp; English.
XX
CC This is the extracellular domain (ECD, aai-362) of murine neuregulin
CC related ligand NRG3 (see also AAW97617), a novel member of the
epidermal growth factor (EGF)-like family of protein ligands. NRG3
binds to the ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor,
activates ErbB4 receptor tyrosine phosphorylation. The invention
provides human and murine polypeptides (see also AAW97618) that have
at least 75% homology to the NRG3 ECD, as well as expression vectors,
host cells and methods for the recombinant production of novel
NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
enhance the survival, proliferation or differentiation of cells
having the ErbB4 receptor in vivo and in vitro. They can be used to
prevent or treat damage to a nerve or damage to other NRG3-expressing
or NRG3-responsive cells, e.g. brain, heart, or kidney cells. In
particular, they can be used to treat diseases which involve neural
cell growth such as demyelination, or damage or loss of glial cells
(e.g. multiple sclerosis). They can be used to treat patients whose
nervous system has been damaged by e.g. trauma, surgery, stroke,
ischaemia, infection, metabolic disease, nutritional deficiency,

Query Match 100 %; Score 277; DB 20; Length 362;
Best Local Similarity 100 %; Pred. No. 1.1e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 HFKPCRDKDILAYCLNDGECVIEETLGSHKRCRCKEGYQGVRCDDFL 47
Db 288 hfkpcrdkdlayclndgecvietltgshkrcrckegyqgvrcddfl 334

RESULT 5
AAW97619
ID AAW97619 standard; Protein; 696 AA.
XX
AC AAW97619;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 (splice variant).
XX
KW Neuregulin related ligand; NRG3; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;

XX	neuropathy; therapy; diagnosis; splice variant.
OS	Home sapiens.
FH	Location/Qualifiers
FT	Key
FT	Domain
FT	1..360
FT	/note- "extracellular domain, specifically claimed
FT	66..91
FT	/note- "hydrophobic region"
FT	101..284
FT	/note- "mucin-like Ser/Thr-rich region, contains
FT	285..354
FT	sites for O-linked glycosylation"
FT	/note- "EGF-like domain"
FT	356..394
FT	/note- "transmembrane domain"
XX	W09902681-A1.
XX	21-JAN-1999.
PD	30-JUN-1998; 98WO-US13411.
XX	24-JUL-1997; 97US-0899437.
PR	09-JUL-1997; 97US-0052019.
PA	(GETH) GENENTECH INC.
PI	Godowski PJ, Mark MR, Zhang D;
XX	DR
XX	WPI; 1999-120882/10.
DR	N-PSDB; AAX06989.
XX	21-JAN-1999.
PT	New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome
PT	XX
PS	Example 1; Page 78-81; 101pp; English.
CC	This is the amino acid sequence of -splice variant hNRG3B2 of human neuregulin related ligand NRG3, a novel member of the epidermal growth factor (EGF)-like family of protein ligands that binds to the ErbB2 or ErbB3 receptor, but not to the ErbB2 or ErbB3 receptor, and which activates ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal brain library. hNRG3B2 lacks amino acids 529-552 of hNRG3B1 (see AAW97618) but retains the EGF-like domain and is expected to exhibit biological activity. The invention provides human and murine NRG3 polypeptides (see AAW97617), expression vectors, host cells and methods for the recombinant production of NRG3s. The NRG3 polypeptides and polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having the ErbB4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing domain and is expected to exhibit biological activity. The invention provides human and murine NRG3 polypeptides (see AAW97617), expression vectors, host cells and methods for the recombinant production of NRG3s. The NRG3 polypeptides and polynucleotides and can be used to enhance the survival, proliferation or differentiation of cells having the ErbB4 receptor in vivo and in vitro. They can be used to prevent or treat damage to a nerve or damage to other NRG3-expressing particular, they can be used to treat diseases which involve neural cell growth such as demyelination, or damage or loss of glial cells (e.g. multiple sclerosis). They can be used to treat patients whose nervous system has been damaged by e.g. trauma, surgery, stroke, ischaemia, infection, metabolic disease, nutritional deficiency, malignancy, or toxic agents. NRG3 can also be used to treat motor neuron disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions involving spinal muscular atrophy or paralysis, neurodegenerative disorders such as Alzheimer's disease, Parkinson's disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness and Meniere's disease. They can also be used to treat neuropathies associated with systemic disease including post-polio syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's disease, metachromatic leuodystrophy, Fabry's disease and Dejerine-Sottas syndrome, to treat disease of skeletal muscle of
XX	smooth muscle, such as muscular dystrophy or diseases caused by skeletal or smooth muscle wasting. The products can also be used for detection, diagnosis, for the production of transgenic or knockout animals or for drug screening.
SQ	Sequence 696 AA;
RESULT 6	AAW97617
ID	AAW97617 standard; Protein: 713 AA.
XX	AAW97617;
AC	AAW97617;
XX	10-MAY-1999 (first entry)
DT	Mouse neuregulin related ligand NRG3.
DE	Neuregulin related ligand; NRG3; mouse; ErbB4 receptor; signal transduction; nervous system disorder; neurodegeneration; neuropathy; therapy; diagnosis.
KW	
XX	OS
OS	Mus sp.
FH	Location/Qualifiers
FT	Key
FT	Domain
FT	1..362
FT	/note- "extracellular domain, specifically claimed
FT	66..91
FT	/note- "hydrophobic region"
FT	105..286
FT	/note- "mucin-like Ser/Thr-rich region, contains
FT	287..334
FT	sites for O-linked glycosylation"
FT	/note- "EGF-like domain"
FT	363..385
FT	/note- "transmembrane domain"
XX	Domain
XX	W09902681-A1.
PD	21-JAN-1999.
XX	30-JUN-1998; 98WO-US13411.
XX	24-JUL-1997; 97US-0899437.
PR	09-JUL-1997; 97US-0052019.
PA	(GETH) GENENTECH INC.
PI	Godowski PJ, Mark MR, Zhang D;
XX	DR
XX	WPI; 1999-120882/10.
DR	N-PSDB; AAX06987.
XX	New isolated neuregulin related ligand-3 - used to develop products for treating nervous system disorders, e.g. stroke, ischaemia, infection, malignancy, Alzheimer's disease or Down's syndrome
CC	This is the amino acid sequence of murine neuregulin related ligand NRG3, a novel member of the epidermal growth factor (EGF)-like family of protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, and which activates ErbB4 receptor

CC tyrosine phosphorylation. The sequence was deduced from the
 CC nucleotide sequences of cDNA clones (see AAX6987) from a mouse brain
 CC library. The EGF-like domain of NRG3 is distinct from those of NRG1
 CC or NRG2, and NRG3 displays receptor binding characteristics that are
 CC distinct from those of other neuregulins. The invention provides
 CC human and murine NRG3 polypeptides (see also AAW9618), expression
 CC vectors, host cells and methods for the recombinant production of
 CC NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
 CC enhance the survival, proliferation or differentiation of cells
 CC having the ErbB4 receptor in vivo and in vitro. They can be used to
 CC prevent or treat damage to a nerve or damage to other NRG3-expressing
 CC cells, e.g. brain, heart, or kidney cells. In particular, they can be used to
 CC treat diseases which involve neural cell growth, such as demyelination,
 CC (e.g. multiple sclerosis). They can be used to treat patients whose
 CC nervous system has been damaged by e.g. trauma, surgery, stroke,
 CC ischaemia, infection, metabolic disease, nutritional deficiency,
 CC malignancy, or toxic agents. NRG3 can also be used to treat
 CC motor neuron disorders such as amyotrophic lateral sclerosis (Lou
 CC Gehrig's disease), Bell's palsy, conditions involving spinal
 CC muscular atrophy or paralysis, neurodegenerative disorders such as
 CC Alzheimer's disease, Parkinson's disease, epilepsy, multiple
 CC sclerosis, Huntington's chorea, Down's syndrome, nerve deafness,
 CC and Meniere's disease. They can also be used to treat neuropathies
 CC associated with systemic disease including post-polio syndrome,
 CC hereditary neuropathies including Charcot-Marie-Tooth disease,
 CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
 CC disease, metachromatic leukodystrophy, Fabry's disease and
 CC Dejerine-Sottas syndrome, to treat disease of skeletal muscle or
 CC smooth muscle, such as muscular dystrophy, or disease caused by
 CC skeletal or smooth muscle wasting. The products can also be used
 CC for detection, diagnosis, for the production of transgenic or
 CC knockout animals or for drug screening.
 XX sequence 713 AA;

Query Match 100.0%; Score 277; DB 20; Length 713;
 Best Local Similarity 100.0%; Pred. No. 2e-20; Mismatches 0; Indels 0; Gaps 0;
 Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 HFKPCDKDLYCLNGECEVIEETLGSHHCRCKEGYQGVRCDFL 47
 CC ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
 Db 288 hfkpcerdkdlyclngecfvietlttgshkhcrckegyqgvrcdf 334
 CC ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
 RESULT 8
 AAW97618 standard; Protein; 720 AA.
 ID AAW97618
 XX AAW97618;
 AC AAW97618;
 XX
 DT 10-MAY-1999 (first entry)
 XX
 DE Human neuregulin related ligand NRG3.
 XX
 KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
 KW signal transduction; nervous system disorder; neurodegeneration;
 KW neuropathy; therapy; diagnosis.
 XX
 OS Homo sapiens.
 XX
 FH Key Location/Qualifiers
 FT Domain 1..360
 FT /note= "extracellular domain, specifically claimed
 FT in claim 5(a)." in
 FT Region 6..91
 FT /note= "hydrophobic region"
 FT Region 101..284
 FT /note= "mucin-like Ser/Thr-rich region, contains
 FT Domain 285..354 sites for O-linked glycosylation."
 FT /note= "EGF-like domain"
 FT Domain 356..394
 FT /note= "transmembrane domain"
 XX
 PN WO9902681-A1.
 XX
 PD 21-JAN-1999.
 XX
 PF 30-JUN-1998; 98WO-US13411.
 XX
 PR 24-JUL-1997; 97US-089437.
 PR 09-JUL-1997; 97US-0052019.
 XX
 PA (HUMA-) HUMAN GENOME SCI INC.
 PA (GEORGE) GEORGETOWN.
 XX
 PI Godowski PJ, Mark MR, Zhang D;
 XX

OS Synthetic.
 XX
 PN WO9631599-A1.
 XX
 PD 10-OCT-1996.
 XX
 PR 27-MAR-1996; 96WO-US04262.
 XX
 PR 06-APR-1995; 95US-0417640.
 PA (AMGE-) AMGEN INC.
 XX
 PT Cranahan JF, Hara S, Lu HS, Mayer JP, Yoshinaga SK;
 XX
 DR XX
 PR peptide(s) derived from neu differentiation factor/hercogelin
 proteins - specifically from epidermal growth factor-like domain's
 stimulate proliferation of colon epithelial cells and Schwann cells
 XX
 PS
 Claim 1; Page 27; 37pp; English.
 XX
 CC The peptides AM05182-W05185 are based on neu differentiation factor
 (NDF)/hercogelin alpha and beta form EGF-like domains in various
 combinations. The peptides maintain the survival and proliferation of
 Schwann cells and cause proliferation, growth and differentiation of
 colon epithelial cells. Accordingly, they are useful to treat (in vitro
 or in vivo) a disease or disorder of the colon (e.g. colitis or an
 ulcer) or of the nervous system (e.g. nerve damage caused by trauma).
 XX
 Sequence 52 AA;
 SQ

XX
 PT Novel monoclonal antibody against adult rat utricular epithelium useful
 PT in study and research with such organs and tissue.
 XX
 PS Example 1; Fig 1; 12pp; English.
 XX
 CC The present invention describes a monoclonal antibody (1) deposited with
 CC the American Type Culture Collection under accession number HB-12298.
 CC The antibodies are used in study and research with adult rat utricular
 CC organs and tissues. The present sequence is a peptide derived from
 CC the epithelial growth factor (EGF) like domains of NDF-alpha and
 CC NDF-beta (members of the NDF/heregulin protein family, which is used in
 CC the exemplification of the present invention. The peptide acts as a
 CC growth stimulant for sensory epithelial cells of the inner ear.
 XX
 SQ Sequence 52 AA;

Query Match 42.1%; Score 116.5; DB 21; Length 52;
 Best Local Similarity 33.3%; Pred. No. 3.1e-05;
 Matches 16; Conservative 15; Mismatches 16; Indels 1; Gaps 1;
 QY 1 HKPKCRODKDYLAYCLNQECFVLTIGSHKH-CRCKEGYQGRCDQFL 47
 DB 2 hlvkaekektfcvnggecmvkdlsnpsrylckcqpgftgarcqny 49

RESULT 12
 AAW05184 ID AAW05184 standard; peptide: 52 AA.
 XX
 AC AAW05184;
 XX
 DT 04-JUN-1997 (first entry)
 XX
 DE Neu differentiation factor/heregulin-alpha form EGF-like domain.
 XX
 KW NDF; neu differentiation factor; heregulin; epidermal growth factor;
 KW EGF; colon epithelial cell proliferation; Schwann cell; nerve;
 KW damage; colitis; ulcer.
 OS Synthetic.
 XX
 PN W09631599-A1.
 XX
 PD 10-OCT-1996.
 XX
 PR 27-MAR-1996; 96WO-US04262.
 XX
 PR 06-APR-1995; 95US-0417640.
 PA (AMGE-) AMGEN INC.
 XX
 PI Cranahan JF, Hara S, Lu HS, Mayer JP, Yoshinaga SK;
 XX
 DR WPI; 1996-465022/46.
 XX
 PT Peptides(s) derived from neu differentiation factor/heregulin
 PT proteins - specifically from epidermal growth factor-like domain,
 PT stimulate proliferation of colon epithelial cells and Schwann cells
 PT Disclosure; Page 24; 37pp; English.

XX
 CC The peptides AAW05182-W09631599 are based on neu differentiation factor
 CC (NDF)/heregulin alpha and beta form EGF-like domains in various
 CC combinations. The peptides maintain the survival and proliferation of
 CC Schwann cells and cause proliferation, growth and differentiation of
 CC colon epithelial cells. Accordingly, they are useful to treat (in vitro
 CC or in vivo) a disease or disorder of the colon (e.g. colitis or an
 CC ulcer) or of the nervous system (e.g. nerve damage caused by trauma).

XX
 SQ Sequence 52 AA;

Query Match 41.0%; Score 113.5; DB 17; Length 52;
 Best Local Similarity 34.8%; Pred. No. 6.3e-05;
 Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;
 QY 1 HKPKCRODKDYLAYCLNQECFVLTIGSHKH-CRCKEGYQGRCDQ 45
 DB 2 hlvkaekektfcvnggecmvkdlsnpsrylckcqpgftgarc 47

RESULT 13
 AAR46918 ID AAR46918 standard; Protein; 63 AA.
 XX
 AC AAR46918;
 XX
 DT 28-JUL-1994 (first entry)

DE EGFL2.

XX Glial growth factor; GGF; heregulin; mitogenesis; PA PA

KW Schwann cell; tumour; central nervous system; erbB2 receptor; PA (LUDW-1) LUDWIG INST CANCER RES.

KW antiproliferative; epidermal growth factor; EGF. XX

XX WO9403644-A. PI PI

XX PD 17-FEB-1994. PI Stroobant P., Waterfield M.;

XX PF 10-AUG-1993; 93WO-US07491. XX

XX PR 10-AUG-1992; 92US-0927337. DR WPI: 1994-025882/03.

XX PR 25-SEP-1992; 92US-0951747. XX

XX PR 01-DEC-1992; 92US-0994085. CC EGFL1, EGFL2, EGFL3, EGFL4, EGFL5 and EGFL6 are used

XX PR 29-JAN-1993; 93US-0011396. CC for the stimulation of glial cell mitogenesis in vivo

XX PA (CAMB-) CAMBRIDGE NEUROSCIENCE INC. CC and in vitro.

XX PI Gwynne DR, Marchionni M, McBurney RN; XX

XX WPI: 1994-0258731/08. PS Claim 53; FIG 39; 178pp; English.

XX DR N-PSDB; AAQ8324. XX

XX PT Glial mitogenic Polypeptide factors - useful for stimulating glial cell mitogenesis and treating glial cell tumours PT

XX PR 10-AUG-1992; 92US-0927337. XX

XX PR 25-SEP-1992; 92US-0951747. CC EGFL1, EGFL2, EGFL3, EGFL4, EGFL5 and EGFL6 are used

XX PR 01-DEC-1992; 92US-0994085. CC for the stimulation of glial cell mitogenesis in vivo

XX PR 29-JAN-1993; 93US-0011396. CC and in vitro.

XX PA Sequence 63 AA; XX

XX PI Gwynne DR, Marchionni M, McBurney RN; XX

XX WPI: 1994-0258731/08. PS Claim 53; FIG 39; 178pp; English.

XX DR N-PSDB; AAQ8324. XX

XX PT Glial growth factor DNA encoding numerous polypeptide factors used for inhibiting cell proliferation - for treating carcinoma PT

XX CC such domains and the erbB2 receptor. Pref. antiproliferative CC

XX PS Disclosure; FIG 40; 178pp; English. XX

XX CC The GGF coding segments include regions with EGF-like homology. CC These EGF-like domains can be required for the activation of mitogenesis in the binding reaction between GGF ligands contg. CC such domains and the erbB2 receptor. Pref. antiproliferative CC factors are those which lack these EGF-like domains. XX

XX Sequence 63 AA; XX

Query Match 41.0%; Score 113.5; DB 15; Length 63; Best Local Similarity 34.8%; Pred. No. 7.5e-05; Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1; Gaps

QY 1 HFKPCRDKDPLAYCLNDGECFVIEITLTGSHKH-CRCKEGSYGVRCDD 45

Db 2 hlvkaekektfcvnggeccfmvlslsnpsrylckcqpgftgarcte 47

XX RESULT 15 DR 15-AUG-1995 (first entry)

XX DE Human epidermal like growth factor 2 (EGFL2).

XX ID AAR67250 standard; Protein; 63 AA.

XX KW Epidermal like growth factor 2; mammalian muscle cell treatment; skeletal; cardiac; smooth; acetylcholine receptor deficiency; EGFL2.

XX OS Homo sapiens.

XX AC AAR67250; PN WO9426298-A.

XX DT 28-JUL-1994 (first entry).

XX DE EGFL2.

XX ID AAR55659 standard; Protein; 63 AA.

XX AC AAR55659; PN WO9426298-A.

XX DT 28-JUL-1994 (first entry).

XX DE EGFL2.

XX KW Glial growth factor; GGF; heregulin; mitogenesis; PA PA

KW Schwann cell; tumour; central nervous system; PA (LUDW-1) LUDWIG INST CANCER RES.

KW epidermal growth factor; EGF. XX

XX PN WO9400140-A. DR WPI: 1993-006533/01.

XX PD 06-JAN-1994. DR N-PSDB; AAQ74915.

XX PR 29-JUN-1993; 93WO-US06228. PA

XX PT Treating mammalian muscle diseases and disorders - by admin. of PT GGF2 and other specified polypeptide(s), which bind the p185erb2 receptor. XX

XX PR 30-JUN-1992; 92US-0907138. CC AAQ74915 encodes AAR67250 human epidermal like growth factor 2 (EGFL2).

XX PR 01-SEP-1992; 92US-0940389. CC The glial cell mitogenic activity of EGFL2 can be used to treat a

XX PR 23-OCT-1992; 92US-0965173. CC variety of mammalian skeletal, cardiac and smooth muscle diseases, including acetylcholine receptor deficiency.

XX PR 24-MAR-1993; 93US-0036555. XX

Sequence 63 AA;

Search completed: February 7, 2002, 12:59:51
Job time: 305 sec

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OM protein - protein search, using sw model

Run on:

February 7, 2002, 13:00:12 ; Search time 10.15 seconds

(without alignments)

169.778 Million cell updates/sec

Title: US-09-480-977-4

Perfect score: 277

Sequence: 1 HFKKCRDKDLYCLNDGCF.....SHKKCCKEKGYGVRCQDFL 47

Scoring table:

BLOSUM62, Gapop 10.0 , Gapext 0.5

Searched:

100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Listing first 45 summaries

Database : SwissProt_39;*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No. Score Query Length DB ID

Description

NRG3_MOUSE 035181 mus musculus

NRG3_MOUSE 093383 xenopus lae

NRG3_XENIA 056975 homo sapien

NRG1_HUMAN 002297 h-pro-neure

NRG2_MOUSE 094tx4 mus musculus

NRG2_HUMAN 015491 homo sapien

NRG2_MOUSE 056974 mus musculus

NRG1_RAT 043322 r-pro-neure

NRG1_CHICK 005199 gallus gallus

NRG2_HUMAN 014511 homo sapien

NRG2_RAT 035569 rattus norvegicus

NRG2_HUMAN 014944 homo sapien

NRG1_SFVRKA 028441 shope fibro

NRG1_MOUSE 001705 mus musculus

NRG1_MOUSE 005928 mus musculus

NRG1_BOVIN 09ttc5 bos taurus

NRG1_SFVRKA 028072 myxoma virus

SPT1_DROME 001083 drosophila

NRG1_HUMAN 035070 homo sapien

NRG1_VACCY 001136 vaccinia virus

NRG1_VACCY 020494 vaccinia virus

NRG1_MOUSE 048030 mus musculus

NRG1_BOVIN 001134 rattus norvegicus

NRG1_RAT 00708 rattus norvegicus

NRG1_HUMAN 001133 homo sapien

NRG1_RAT 001136 rattus norvegicus

NRG1_MOUSE 001143 mus musculus

NRG1_SFVRKA 004962 cavia porcellus

RESULT	1	74.5	26.9	1429	1	LT12_CAEEL	P14585 caenorhabdi
ID	NRG3_MOUSE			35	74	26.7	P77113 oryctolagus
AC	035181			35	74	26.7	LEM2_RABBT
DT	20-AUG-2001	(Rel. 40, Created)		36	74	26.7	LEM2_HUMAN
DT	20-AUG-2001	(Rel. 40, Last sequence update)		37	74	26.7	FBNL_BOVIN
DE	20-AUG-2001 (Rel. 40, Last annotation update)			38	74	26.7	FBNL_HUMAN
DE	20-AUG-2001 (Rel. 40, Last annotation update)			39	74	26.7	FBNL_MOUSE
DE	20-AUG-2001 (Rel. 40, Last annotation update)			40	74	26.7	FBNL_PIG
DE	20-AUG-2001 (Rel. 40, Last annotation update)			41	73	26.4	GRK_DROME
DE	20-AUG-2001 (Rel. 40, Last annotation update)			42	73	26.4	MFGM_PIG
DE	20-AUG-2001 (Rel. 40, Last annotation update)			43	73	26.4	NTCA_MOUSE
GN	NRG3			44	73	26.4	P21695 mus musculus
OS	MUS	musculus (Mouse)		45	72.5	26.2	P21783 xenopus lae
OC	Eukaryota						P55244 macaca mulia
OC	Mammalia						
OC	Butherea						
OC	Rodentia						
OC	Sciurognathini						
OC	Muridae						
OC	Murinae						
OC	Mus						
RN	NCBI_TaxID:10909;						
RP	{1}						
RC	SEQUENCE FROM N.A.						
RX	TISSUE-BRAIN;						
RA	MEDLINE-97420720; PubMed-9275162;						
RA	Zhang D., Sliwkowski M. X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P. J.,						
RA	*Neuregulin 3 (NRG3): a novel neural tissue-enriched protein that binds and activates Erbb4."						
RA	Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567 (1997).						
RA	-1. FUNCTION: DIRECT LIGAND FOR THE ERBB4 TYROSINE KINASE RECEPTOR. BINDING RESULTS IN LIGAND-STIMULATED TYROSINE PHOSPHORYLATION AND ACTIVATION OF THE RECEPTOR. DOES NOT BIND TO THE EGF RECEPTOR, ERBB2 OR ERBB3 RECEPTORS.						
RA	-1. SUBCELLULAR LOCATION: EXISTS AS AN TYPE I MEMBRANE PROTEIN AND AS A PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE (BY SIMILARITY).						
RA	-1. TISSUE SPECIFICITY: EXPRESSED IN SYMPATHETIC, MOTOR, AND SENSORY NEURONS.						
RA	-1. DEVELOPMENTAL STAGE: DETECTED AS EARLY AS E11. IN E13 EMBRYOS, DETECTED MAINLY IN THE NERVOUS SYSTEM. IN E16 EMBRYOS, DETECTED IN THE BRAIN, SPINAL CORD, TRIGEMINAL, VESTIBULAR-COCHLEAR, AND SPINAL GANGLIA. IN ADULTS, EXPRESSED IN SPINAL CORD, AND NUMEROUS BRAIN REGIONS.						
RA	-1. DOMAIN: THE CYTOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION (BY SIMILARITY).						
RA	-1. DOMAIN: ERBB RECEPTOR BINDING IS ELICITED ENTIRELY BY THE EGF-LIKE DOMAIN (BY SIMILARITY).						
RA	-1. DOMAIN: PROTEOLYTIC CLEAVAGE CLOSE TO THE PLASMA MEMBRANE ON THE EXTERNAL FACE LEADS TO THE RELEASE OF THE SOLUBLE GROWTH FACTOR FORM (BY SIMILARITY).						
RA	-1. PTM: EXTENSIVE GLYCOSYLATION PRECEDES THE PROTEOLYTIC CLEAVAGE (BY SIMILARITY).						
RA	-1. SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.						
RA	-1. SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.						
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial						

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CC

CC EMBL: APO10130; AAB70914-1;

CC MGD: MGI:1097165; Nrg3.

CC DR InterPro: IPR000561; EGF-like.

CC DR InterPro: IPR02154; Neuregulin.

CC DR Pfam: PF00008; EGF; 1.

CC DR Pfam: PF02158; Neuregulin; 1.

CC SMART: SM00181; EGF; 1.

CC PROSITE: PS0022; EGF_1; 1.

CC PROSITE: PS01186; EGF_2; 1.

CC KW Growth factor; EGF-like domain; transmembrane; Multigene family; PRO-NEUREGULIN-3; MEMBRANE-BOUND FORM.

CC FT CHAIN 1 713 NEUREGULIN-3.

CC FT DOMAIN 1 361 EXTRACELLULAR (POTENTIAL).

CC FT TRANSMEM 363 383 INTERNAL SIGNAL SEQUENCE (POTENTIAL).

CC FT DOMAIN 384 713 CYTOPLASMIC (POTENTIAL).

CC FT DOMAIN 105 287 SER/THR-RICH.

CC FT DOMAIN 288 331 EGF-LIKE.

CC FT DOMAIN 13 21 POLY-ALA.

CC FT DOMAIN 26 34 POLY-ALA.

CC FT DOMAIN 127 135 POLY-THR.

CC FT DOMAIN 250 253 POLY-ALA.

CC FT DOMAIN 254 263 POLY-SER.

CC FT DOMAIN 264 267 POLY-THR.

CC FT DOMAIN 292 306 BY SIMILARITY.

CC FT DISULFID 300 319 BY SIMILARITY.

CC FT DISULFID 321 330 BY SIMILARITY.

CC SQ SEQUENCE 713 AA; 77369 MW; 9F7D1D5E7FC8DC0 CRC64;

CC

CC Query Match 100.0%; Score 277; DB 1; Length 713; Best Local Similarity 100.0%; Pred. No. 6. 2e-26; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

CC

CC QY 1 HFKPCRDKDLAVCLNDGECFCVIELTGSKHCRCKEYQGVRCQDFL 47

CC DB 288 HFKPCRDKDLAVCLNDGECFCVIELTGSKHCRCKEYQGVRCQDFL 334

CC

RESULT 2

NRG3_HUMAN

CC ID NRG3_HUMAN 'STANDARD'; PRT; 720 AA.

CC AC P5975; P5975; 20-AUG-2001 (Rel. 40, Created)

CC DT 20-AUG-2001 (Rel. 40, Last sequence update)

CC DT 20-AUG-2001 (Rel. 40, Last annotation update)

CC DE PRO-NEUREGULIN-3 PRECURSOR (PRO-NRG3) [CONTAINS: NEUREGULIN-3 (NRG-3)].

CC DE PRO-NEUREGULIN-3 PRECURSOR (PRO-NRG3) [CONTAINS: NEUREGULIN-3 (NRG-3)].

CC OS Homo sapiens (Human).

CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Homidae; Homo.

CC OX NCBI_TaxID=9606; [1]

CC RP SEQUENCE FROM N.A.

CC RC TISSUE-Fetal brain;

CC RX MEDLINE=97420720; PubMed=9275162;

CC RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y., Hillan K., Crowley C., Brush J., Godowski P.J.;

CC RT 'Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that binds and activates Erbb4';

CC RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).

CC CC -1- FUNCTION: DIRECT LIGAND FOR THE ERBB4 TYROSINE KINASE RECEPTOR.

CC CC BINDING RESULTS IN LIGAND-STIMULATED TYROSINE PHOSPHORYLATION AND ACTIVATION OF THE RECEPTOR. DOES NOT BIND TO THE EGF RECEPTOR, ERBB2 OR ERBB3 RECEPTORS.

CC CC -1- SUBCELLULAR LOCATION: EXISTS AS AN TYPE I MEMBRANE PROTEIN AND AS A PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE (BY SIMILARITY).

CC CC -1- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN MOST REGIONS OF THE BRAIN WITH THE EXCEPTION OF CORPUS CALLOSUM. EXPRESSED AT LOWER LEVEL IN

CC

CC TESTS. NOT DETECTED IN HEART, PLACENTA, LUNG, LIVER, SKELETAL MUSCLE, KIDNEY, PANCREAS, SPLEEN, THYMUS, PROSTATE, OVARY, SMALL INTESTINE, COLON AND PERIPHERAL BLOOD LEUKOCYTES.

CC

CC -1- DOMAIN: THE CYTOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION (BY SIMILARITY).

CC

CC -1- DOMAIN: ERBB RECEPTOR BINDING IS ELICITED ENTIRELY BY THE EGF-LIKE DOMAIN (BY SIMILARITY).

CC

CC -1- SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.

CC

CC DR InterPro: IPR000561; EGF-LIKE.

CC DR InterPro: IPR002154; Neuregulin.

CC DR Pfam: PF00008; EGF; 1.

CC DR Pfam: PF02158; Neuregulin; 1.

CC SMART: SM00181; EGF; 1.

CC PROSITE: PS0022; EGF_1; 1.

CC PROSITE: PS01186; EGF_2; 1.

CC KW Growth factor; EGF-like domain; transmembrane; Multigene family; PRO-NEUREGULIN-3; MEMBRANE-BOUND FORM.

CC FT CHAIN 1 720 NEUREGULIN-3.

CC FT DOMAIN 1 359 EXTRACELLULAR (POTENTIAL).

CC FT TRANSMEM 361 381 INTERNAL SIGNAL SEQUENCE (POTENTIAL).

CC FT DOMAIN 382 720 CYTOPLASMIC (POTENTIAL).

CC FT DOMAIN 105 285 SER/THR-RICH.

CC FT DOMAIN 5 21 POLY-ALA.

CC FT DOMAIN 13 26 POLY-ALA.

CC FT DOMAIN 127 135 POLY-THR.

CC FT DOMAIN 252 260 POLY-SER.

CC FT DOMAIN 262 265 POLY-THR.

CC FT DISULFID 290 304 BY SIMILARITY.

CC FT DISULFID 298 317 BY SIMILARITY.

CC FT DISULFID 319 328 BY SIMILARITY.

CC SQ SEQUENCE 720 AA; 77990 MW; A4D6F1ODDB955693 CRC64;

CC

CC Query Match 100.0%; Score 277; DB 1; Length 720; Best Local Similarity 100.0%; Pred. No. 6. 2e-26; Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

CC

CC QY 1 HFKPCRDKDLAVCLNDGECFCVIELTGSKHCRCKEYQGVRCQDFL 47

CC DB 286 HFKPCRDKDLAVCLNDGECFCVIELTGSKHCRCKEYQGVRCQDFL 332

CC

RESULT 3

NRG1_XENLA

CC ID NRG1_XENLA 'STANDARD'; PRT; 677 AA.

CC AC 093383; 09W0N0; 20-AUG-2001 (Rel. 40, Created)

CC DT 20-AUG-2001 (Rel. 40, Last sequence update)

CC DT 20-AUG-2001 (Rel. 40, Last annotation update)

CC DE PRO-NEUREGULIN-1 PRECURSOR (PRO-NRG1) [CONTAINS: NEUREGULIN-1].

CC GN NRG1.

CC OS Xenopus laevis (African clawed frog).

CC OC Xenopoda; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipidae; Xenopus.

CC OX NCBI_TaxID=8355; [1]

CC RP SEQUENCE FROM N.A. (ISOFORM ALPHAI), AND ALTERNATIVE SPLICING.

CC RX MEDLINE=985126; PubMed=665555;

CC RA Yang J.-F., Zhou H., Pun S., Ip N.Y., Peng H.B., Tsui K.W.K.;

CC RT 'Cloning of cDNAs encoding xenopus neuregulin: expression in myotomal muscle during embryo development';

CC RL Brain Res. Mol. Brain Res. 58:59-73(1998).

PRINTS: PRO1089; NEUREGULIN-
 PROSITE: PS00022; EGF_1; 1;
 PROSITE: PS01186; EGF_2; 1;
 DR PROSITE: PS00056; EGF-like;
 DR Growth factor; EGF-like domain; Immunoglobulin domain; Glycoprotein;
 DR Transmembrane; Multigene family; Polymorphism; 3D-structure;
 DR Alternative splicing; Chromosomal translocation.
 FT INIT-MET 0 0

Query Match 41.0%; Score 113.5; DB 1; Length 639;
 Best Local Similarity 34.8%; Pred. No. 2.2e-06;
 Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;
 FT CHAIN 1 115 PRO-NEUREGULIN-4, MEMBRANE-BOUND FORM.
 FT DOMAIN 1 61 NEUREGULIN-4
 FT TRANSMEM 63 83 EXTRACELLULAR (POTENTIAL).
 FT DOMAIN 84 115 INTERNAL SIGNAL SEQUENCE (POTENTIAL).
 FT DOMAIN 5 46 CTOPLASMIC (POTENTIAL).
 FT DISULFID 9 23 EGF-LIKE.
 FT DISULFID 17 34 BY SIMILARITY.
 FT DISULFID 36 45 BY SIMILARITY.
 FT CARBOHYD 39 39 N-LINKED (GLCNAC . .) (POTENTIAL).
 FT CARBOHYD 60 60 N-LINKED (GLCNAC . .) (POTENTIAL).
 SQ 115 AA; 12743 MW; 989A1E376F857B49 CRC64;

RESULT 5
 NRG4_MOUSE STANDARD; PRT; 115 AA.
 ID NRG4_MOUSE
 AC Q9WTK4;
 DT 20-AUG-2001 (Rel. 40, Last sequence update)
 DT 20-AUG-2001 (Rel. 40, Last annotation update)
 DT 20-AUG-2001 (Rel. 40, Last annotation update)
 DE PRO-NEUREGULIN-4, SHORT ISOFORM (PRO-NRG4) [CONTAINS: NEUREGULIN-4 (NRG-4)].
 DE NRG4
 OS Mus musculus (Mouse)
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathii; Muridae; Murinae; Mus.
 RN [1] SEQUENCE FROM N.A.
 RC STRAIN=C57BL/6J; TISSUE=Liver;
 RX MEDLINE-99276098; PubMed-10348342;
 RA Harari D., Tzahar E., Romano J., Shelly M., Pierce J.H., Andrews G.C.,
 RT "Neuregulin-4: a novel growth factor that acts through the ERBB-4 receptor tyrosine kinase";
 RL Oncogene 18:2681-2689 (1999).
 -I- FUNCTION: LOW AFFINITY LIGAND FOR THE ERBB4 TYROSINE KINASE RECEPTOR. CONCOMITANTLY RECRUITS ERBB1 AND ERBB2 CORECEPTORS, RESULTING IN LIGAND-STIMULATED TYROSINE PHOSPHORYLATION AND ACTIVATION OF THE ERBB RECEPORS. DOES NOT BIND TO THE ERBB1, ERBB2 AND ERBB3 RECEPTORS.
 -I- SUBCELLULAR LOCATION: EXISTS AS AN TYPE I MEMBRANE PROTEIN AND AS A PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE (BY SIMILARITY).
 -I- ALTERNATIVE PRODUCTS: AT LEAST 3 ISOFORMS MAY BE PRODUCED BY ALTERNATIVE SPlicing.
 -I- TISSUE SPECIFICITY: HIGHLY EXPRESSED IN PANCREAS; WEAKLY EXPRESSED IN MUSCLE.
 -I- DOMAIN: THE CYTOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION (BY SIMILARITY).
 -I- DOMAIN: ERBB RECEPTOR BINDING IS ELICITED ENTIRELY BY THE EGF-LIKE DOMAIN (BY SIMILARITY).
 -I- PIM: PROTEOLYTIC CLEAVAGE CLOSE TO THE PLASMA MEMBRANE ON THE EXTERNAL FACE LEADS TO THE RELEASE OF THE SOLUBLE GROWTH FACTOR (BY SIMILARITY).
 -I- PIM: EXTENSIVE GLYCOSYLATION PRECEDES THE PROTEOLYTIC CLEAVAGE (BY SIMILARITY).
 -I- SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.
 -I- SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.

Query Match 39.7%; Score 110; DB 1; Length 115;
 Best Local Similarity 42.2%; Pred. No. 1.2e-06;
 Matches 19; Conservative 8; Mismatches 16; Indels 2; Gaps 1;
 FT CHAIN 1 115 PRO-NEUREGULIN-4, MEMBRANE-BOUND FORM.
 FT DOMAIN 1 61 NEUREGULIN-4
 FT TRANSMEM 63 83 EXTRACELLULAR (POTENTIAL).
 FT DOMAIN 84 115 INTERNAL SIGNAL SEQUENCE (POTENTIAL).
 FT DOMAIN 5 46 CTOPLASMIC (POTENTIAL).
 FT DISULFID 9 23 EGF-LIKE.
 FT DISULFID 36 45 BY SIMILARITY.
 FT CARBOHYD 39 39 N-LINKED (GLCNAC . .) (POTENTIAL).
 FT CARBOHYD 60 60 N-LINKED (GLCNAC . .) (POTENTIAL).
 SQ 115 AA; 12743 MW; 989A1E376F857B49 CRC64;

RESULT 6
 SMDF_HUMAN STANDARD; PRT; 296 AA.
 ID SMDF_HUMAN
 AC Q15491;
 DT 20-AUG-2001 (Rel. 40, created)
 DT 20-AUG-2001 (Rel. 40, Last sequence update)
 DT 20-AUG-2001 (Rel. 40, Last annotation update)
 DE NEUREGULIN-1, SENSORY AND MOTOR NEURON-DERIVED-FACTOR ISOFORM.
 RN NRG1 OR NDF OR HRGA OR GGF OR SMDF.
 OS Homo sapiens (Human)
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarhini; Homidae; Homo.
 OC NCBI_TaxID=9606;
 RN [1] SEQUENCE FROM N.A.
 RC TISSUE=Brain stem, and Cerebellum;
 RX MEDLINE-95310541; PubMed-7782315;
 RA RT "Sensory and motor neuron-derived factor. A novel heregulin variant, highly expressed in sensory and motor neurons . . .";
 RL J. Biol. Chem. 270:14521-14527 (1995).
 CC -I- FUNCTION: THE ISOFORM SMDF MAY PLAY A ROLE IN MOTOR AND SENSORY NEURON DEVELOPMENT.
 CC -I- SUBCELLULAR LOCATION: SECRETED. MAY POSSESS AN INTERNAL UNCLEAVED SIGNAL SEQUENCE.
 CC -I- ALTERNATIVE PRODUCTS: AT LEAST 10 ISOFORMS OF NRG1 ARE PRODUCED BY ALTERNATIVE SPlicing, EXCEPT FOR SMDF THEY ARE IN ENTRY AC_00297.
 CC -I- TISSUE SPECIFICITY: EXPRESSED IN NERVOUS SYSTEM: SPINAL CORD, MOTOR NEURONS, DORSAL ROOT GANGLION NEURONS, AND BRAIN. PREDOMINANTLY ISOPFORM EXPRESSED IN SENSORY AND MOTOR NEURONS. NOT DETECTED IN ADULT HEART, PLACENTA, LUNG, LIVER, SKELETAL MUSCLE, KIDNEY, AND PANCREAS. NOT EXPRESSED IN FETAL LUNG, LIVER, AND KIDNEY.
 CC -I- DEVELOPMENTAL STAGE: HIGHLY EXPRESSED IN DEVELOPING SPINAL MOTOR NEURONS AND IN DEVELOPING CRANIAL NERVE NUCLEI. EXPRESSION IS MAINTAINED ONLY IN BOTH ADULT MOTOR NEURONS AND DORSAL ROOT GANGLION NEURONS.
 CC -I- SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.
 CC -I- SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.

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CC EMBL: L41827; AAC41764.1; -

CC MIN; 142445; -

CC DR InterPro: IPR000561; EGF-like.

CC Pfam: PF00098; EGF; 1.

CC SMART; SM00181; EGF; 1.

CC PROSITE: PS00022; EGF; 1.

CC PROSITE: PSD116; EGF; 2; FALSE_NEG.

CC KW Alternative factor; EGF-like domain; Transmembrane; Multigene family;

CC KW Alternative splicing;

CC FT TRANSMEM 76 100 INTERNAL SIGNAL SEQUENCE (POTENTIAL).

CC FT DOMAIN 58 91 CYS-RICH.

CC FT DOMAIN 211 232 SER/THR-RICH.

CC FT DOMAIN 233 277 EGF-LIKE.

CC FT DISULFID 237 251 BY SIMILARITY.

CC FT DISULFID 245 265 BY SIMILARITY.

CC FT DISULFID 267 275 BY SIMILARITY.

CC SO SEQUENCE 296 AA; 31685 MW; 6041743217P/EB02 CRC64;

Query Match Score 104.5; DB 1; Length 296; Best Local Similarity 31.2%; Pred. No. 3_3e-05; Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HPPKPCRDQLAYCLNDGBCFVTELTGSHKH-CRCKECKYOGVRQDQFL 47

Db 233 HLVKCAKEKETFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 280

RESULT 7

NRG2_MOUSE STANDARD; PRT; 756 AA.

CC ID NRG2_MOUSE

CC DT 20-AUG-2001 (Rel. 40, Created)

CC DT 20-AUG-2001 (Rel. 40, Last sequence update)

CC DT 20-AUG-2001 (Rel. 40, Last annotation update)

CC DE PRO-NEUREGULIN-2 PRECURSOR (PRO-NRG2) [CONTAINS: NEUREGULIN-2 (NRG-2) (DIVERGENT OF NEUREGULIN 1) (DON-1)].

CC GN NRG2.

CC OS Mus musculus (Mouse).

CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Scurognathi; Muridae; Murinae; Mus.

CC OX NCBI_TAXID-10090;

CC RN 1.]

CC RP SEQUENCE FROM N.A. (ISOFORMS NRG2-5; NRG2-10 AND NRG2-16A).

CC RC STRAIN=C57BL/6J; TISSUE=Brain;

CC RX MEDLINE-97311398; PubMed-9168115;

CC RA Carraway K.L., III ; Weber J.L., Unger M.J., Ledesma J., Yu N., Giessmann M., LaJ C.; Neuregulin-2, a new ligand of Erbb3/Erbb4-receptor tyrosine kinases", Nature 387:512-516(1997).

CC RT "Neuregulin-2, a new ligand of Erbb3/Erbb4-receptor tyrosine kinases";

CC RN 12]

CC RP SEQUENCE OF 150-756 FROM N.A. (ISOFORMS DON-1M AND DON-1S).

CC RC TISSUE=Chord plexus; MEDLINE-9732638; PubMed-9199335;

CC RA Busfield S.J., Michnick D.A., Chickering T.W., Revett T.L., Ma J., Woolf E.A., Comrack C.A., Dussault B.J., Goodearl A.D.J., Gearling D.P.;

CC RT "Characterization of a neuregulin-related gene, Don-1, that is highly expressed in restricted regions of the cerebellum and hippocampus"; Mol. Cell. Biol. 17:4007-4014(1997).

CC -1- FUNCTION: DIRECT LIGAND FOR ERBB3 AND ERBB4 TYROSINE KINASE RECEPTORS. CONCOMITANTLY RECRUITS ERBB1 AND ERBB2 CORECEPTORS, RESULTING IN LIGAND-STIMULATED TYROSINE PHOSPHORYLATION AND ACTIVATION OF THE ERBB RECEPTORS. MAY ALSO PROMOTE THE

CC -1- HETERO-DIMERIZATION WITH THE EGF RECEPTOR.

CC -1- SUBCELLULAR LOCATION: EXISTS AS AN TYPE I MEMBRANE PROTEIN AND AS A PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE (BY SIMILARITY).

CC -1- ALTERNATIVE PRODUCTS: AT LEAST 4 ISOFORMS; DON-1M, DON-1S, NRG2-10 AND NRG2-16A. (SHOWN HERE); ARE PRODUCED BY ALTERNATIVE SPLICING.

CC TISSUE SPECIFICITY: HIGHEST EXPRESSION IN THE BRAIN, WITH LOWER LEVELS IN THE LUNG. IN THE CEREBELLUM, FOUND IN GRANULE AND PURKINJE CELLS.

CC DOMAIN: THE CYTOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION.

CC -1- DOMAIN: ERBB RECEPTOR BINDING IS ELICITED ENTIRELY BY THE EGF-LIKE DOMAIN (BY SIMILARITY).

CC -1- DOMAIN: THE PROTEOLYTIC CLEAVAGE CLOSE TO THE PLASMA MEMBRANE ON THE EXTERNAL FACE LEADS TO THE RELEASE OF THE SOLUBLE GROWTH FACTOR FORM (BY SIMILARITY).

CC -1- PTM: EXTENSIVE GLYCOSYLATION PRECEDES THE PROTEOLYTIC CLEAVAGE (BY SIMILARITY).

CC -1- SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.

CC -1- SIMILARITY: CONTAINS 1 IMMUNOGLOBULIN-LIKE C2-TYPE DOMAIN.

CC -1- SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.

CC MGD: MGID:1098246; Nrg2.

CC DR InterPro: IPR00051; EGF-like.

CC DR InterPro: IPR0006; Ig_MHC.

CC DR InterPro: IPR0358; Ig_C2.

CC DR Pfam: PF00098; EGF; 1.

CC DR Pfam: PF00047; Ig; 1.

CC DR InterPro: IPR00358; Ig_C2.

CC DR SMART; SM00181; EGF; 1.

CC DR SMART; SM00408; IgC2; 1.

CC DR PROSITE: PS00022; EGF; 1.

CC DR PROSITE: PS01186; EGF; 2; 1.

CC KW Growth factor; EGF-like domain; Immunoglobulin domain; Glycoprotein; Transmembrane; Multigene family; Alternative splicing.

CC FT PROPEP 1 19 BY SIMILARITY.

CC FT CHAIN 20 756 PRO-NEUREGULIN-2, MEMBRANE-BOUND FORM.

CC FT CHAIN 20 314 NEUREGULIN-2.

CC FT DOMAIN 20 315 EXTRACELLULAR DOMAIN.

CC FT TRANSMEM 316 INTERNAL SIGNAL SEQUENCE (POTENTIAL).

CC FT DOMAIN 337 756 CYTOPLASMIC (POTENTIAL).

CC FT DOMAIN 158 226 INTERNAL SIGNAL SEQUENCE (POTENTIAL).

CC FT DOMAIN 238 248 CYTOPLASMIC (POTENTIAL).

CC FT DOMAIN 249 290 EXTRACELLULAR DOMAIN.

CC FT DOMAIN 627 633 POLY-PRO.

CC FT DISULFID 165 219 BY SIMILARITY.

CC FT DISULFID 253 267 BY SIMILARITY.

CC FT DISULFID 261 278 BY SIMILARITY.

CC FT DISULFID 280 289 BY SIMILARITY.

CC FT CARBOHYD 55 55 N-LINKED (GLCNAC. . .) (POTENTIAL).

CC FT CARBOHYD 186 186 N-LINKED (GLCNAC. . .) (POTENTIAL).

CC FT CARBOHYD 254 254 N-LINKED (GLCNAC. . .) (POTENTIAL).

CC FT CARBOHYD 296 296 N-LINKED (GLCNAC. . .) (POTENTIAL).

CC FT CARBOHYD 280 280 N-LINKED (GLCNAC. . .) (POTENTIAL).

CC FT VARSPLIC 281 756 MISSING (IN ISOFORM NRG2-10).

CC FT VARSPLIC 282 330 MISSING (IN ISOFORM NRG2-10).

CC FT VARSPLIC 331 756 VGTGDRQOQAFANVFSKHLGFFKEADELYKRVVLTGICVALLVW-> NGFFGQCRLEKPLRIMPQPKQSTWDT PGVQGSSQWSTPSLQD (IN ISOFORM DON-1S).

CC FT VARSPLIC 331 756 MISSING (IN ISOFORM DON-1S).

CC FT VARSPLIC 282 307 VGTGDRQOQAFANVFSKHLGFFKEADELYKRVVLTGICVALLVW-> NGFFGQCRLEKPLRIMPQPKQSTWDT PGVQGSSQWSTPSLQD (IN ISOFORM DON-1M).

CC SO SEQUENCE 756 AA; 82213 MW; 51D85DC91B8E678E CRC64;

Query Match Score 104; DB 1; Length 756; Best Local Similarity 39.1%; Pred. No. 3_5e-05; Matches 18; Conservative 8; Mismatches 18; Indels 2; Gaps 1;

Qy 1 HPPKPCRDQLAYCLNDGBCFVTELTGSHKH-CRCKECKYOGVRQDQFL 46

FT	DOMAIN	165	177	SER/THR-RICH.
FT	DOMAIN	178	222	EGF-LIKE.
FT	DISULFID	112	112	BY SIMILARITY.
FT	DISULFID	112	112	BY SIMILARITY.
FT	DISULFID	190	210	BY SIMILARITY.
FT	DISULFID	212	221	BY SIMILARITY.
FT	CARBONITRIDE	120	120	N-LINKED (GLCNAC. . .) (POTENTIAL).
FT	CARBONYL	126	126	N-LINKED (GLCNAC. . .) (POTENTIAL).
FT	CARBONYL	164	164	N-LINKED (GLCNAC. . .) (POTENTIAL).
FT	CARBONYL	213	256	PNETGDRQNTVMSAFYMSRKRQETPLERLHDHSVKES->OFGTGAQCTENPKVQTOE (IN ISOFORM ALPHA2A, ISOFORM ALPHA2B AND ISOFORM ALPHA2C).
FT	VARSPLIC	231	257	MTSRKQETEKPPLKLDSLKVKEK->KHLGIEFME
FT	VARSPLIC	231	241	(IN ISOFORM BETA1).
FT	VARSPLIC	242	662	MISRRRQE->STSTPPLSLP (IN ISOFORM BETA2).
FT	VARSPLIC	231	256	MISSING (IN ISOFORM BETA2).
FT	VARSPLIC	325	330	MISSING (IN ISOFORM BETA2).
FT	VARSPLIC	446	662	PENNO->RVRTRG (IN ISOFORM BETA2).
FT	VARSPLIC	446	484	MISSING (IN ISOFORM ALPHA2C).
FT	VARSPLIC	485	662	YVSMATTPARMSPVDFHTPSPKSPKSPMSPVSMVTS->HMLTAEIRKVRKSMQIOLASPLHRSPLSTHLGFIL (IN ISOFORM ALPHA2B).
FT	CONFLICT	90	90	MISSING (IN REF. 2).
FT	CONFLICT	137	137	T->I (IN REF. 2; AA SEQUENCE).
FT	CONFLICT	208	208	I->S (IN REF. 2).
Db	SEQUENCE	662 AA;	73208 MW;	1C31ABC2A8EB1D5 CRC64;
RESULT	9			
NRGL_CHICK				Query Match 37.0%; Score 102.5; DB 1; Length 662; Best Local Similarity 31.2%; Pred. No. 4.7e-05; Matches 15; Conservative 13; Mismatches 19; Indels 1; Gaps 1;
AC	NRG1-CHICK	0055199;	073750;	PRT: 602 AA.
AC	NRG1-CHICK	0055199;	073750;	073751;
DT		20-AUG-2001	(Rel. 40, Created)	
DT		20-AUG-2001	(Rel. 40, Last sequence update)	
DT		20-AUG-2001	(Rel. 40, Last annotation update)	
DE	PRO-NEUREGULIN-1 PR前途素 (PRO-NRGL) [CONTAINS: NEUREGULIN-1 (ACETYLCHOLINE RECEPTOR INDUCING ACTIVITY) (ARIA)].			
DE	NRGL OR ARIA.			
GN	GALLOPS (Chicken).			
OS	Gallus gallus (Chicken).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae; Gallidae.			
OC	NCBI_TAXID=9031;			
OX				
RP	SEQUENCE FROM N.A. (ISOFORM ARIA), AND PARTIAL SEQUENCE.			
RC	STRAIN=WHITE LISHORN; TISSUE=Brain;			
RC	MEDLINE=93201602; PubMed=8453670;			
RA	Falls D.L., Rosen K.M., Corfas G., Lane W.S., Fischbach G.D.,			
RT	"ARIA," protein that stimulates acetylcholine receptor synthesis, is a member of the neu ligand family.;			
RT	Cell 72:801-815(1993).			
RT	SEQUENCE FROM N.A. (ISOFORMS BETA1A; BETA2A AND BETA2B).			
RC	TISSUE=Brain, and spinal cord;			
RC	MEDLINE=98150951; PubMed=9491987;			
RA	Yang X., Xie, Kuo Y., Devay P., Yu C., Role L.;			
RT	"A cysteine-rich isoform of neuregulin controls the level of expression of neuronal nicotinic receptor channels during synaptogenesis." Neuron 20:255-270(1998).			
RL				
FT	FUNCTION: DIRECT LIGAND FOR THE ERBB TYROSINE KINASE RECEPTOR.			
FT	THE MULTIPLE ISOFORMS PERFORM DIVERSE FUNCTIONS: CYSTEINE-RICH DOMAIN CONTAINING ISOFORMS (CRD-NRGL) PROBABLY REGULATE THE EXPRESSION OF NICOTINIC ACETYLCHOLINE RECEPTORS AT DEVELOPING INTERNEURONAL SYNAPSES. THE IC-NRGL ISOFORM IS REQUIRED FOR THE INITIAL INDUCTION AND/OR MAINTENANCE OF THE MATURE LEVELS OF ACETYLCHOLINE RECEPTORS AT NEUROMUSCULAR SYNAPSES.			
FT	-1- SUBCELLULAR LOCALIZATION: EXISTS AS A TYPE I MEMBRANE-PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE. (BY SIMILARITY).			
FT	-1- ALTERNATIVE PRODUCTS: AT LEAST 4 ISOFORMS: ALPHA1-NRGL (SHOWN HERE), CRD-NRGL-BETA1A, CRD-NRGL-BETA2A AND CRD-NRGL-BETA2B; ARE PRODUCED BY ALTERNATIVE SPLICING. ALPHA1A CONTAINS AN EGFR-LIKE DOMAIN, WHEREAS IN THE CRD-NRGL (OR NRGL) ISOFORMS, THE EGFR-LIKE DOMAIN IS REPLACED BY A CYSTEINE-RICH DOMAIN (CRD).			
FT	-1- DEVELOPMENTAL STAGE: CRD-NRGL ISOFORM IS DETECTED AT EMBRYONIC DAY 4 (ED4) IN BOTH VISCERAL AND SOMATIC MOTOR NEURONS OF SPINAL CORD AND IS HIGHEST AT ED6. IC-NRGL ISOFORM IS NOT EXPRESSED UNTIL ED6 IN SPINAL CORD. AT ED 11 BOTH ISOFORMS DISPLAY COMPARABLE LEVELS.			
FT	-1- DOMAIN: THE CYTOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION (BY SIMILARITY).			
FT	-1- DOMAIN: ERBB RECEPTOR BINDING IS ELICITED ENTIRELY BY THE EGFR-LIKE DOMAIN.			
FT	-1- PFM: PROTEOLYTIC CLEAVAGE CLOSE TO THE PLASMA MEMBRANE ON THE EXTRACELLULAR FACE LEADS TO THE RELEASE OF THE SOLUBLE GROWTH FACTOR FORM.			
FT	-1- PFM: EXTENSIVE GLYCOSYLATION PRECEDES THE PROTEOLYTIC CLEAVAGE (BY SIMILARITY).			
FT	-1- SIMILARITY: CONTAINS 1 EGF-LIKE DOMAIN.			
FT	-1- SIMILARITY: BELONGS TO THE NEUREGULIN FAMILY.			
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CC				
DR	EMBL; L11264; AAA49037; 1;			
DR	EMBL; AF045654; AAC056701; 1;			
DR	EMBL; AF045655; AAC056711; 1;			
DR	EMBL; AF045656; AAC056721; 1;			
DR	HSSP; 002297; IHRF.			
DR	InterPro; IPR000561; EGF-like.			
DR	InterPro; IPR003066; Ig_MHC.			
DR	InterPro; IPR003598; Ig_C2.			
DR	InterPro; IPR002154; Neuregulin.			
DR	Pfam; PF00047; 19; 1.			
DR	PRINTS; PRO1089; Neuregulin.			
DR	SMART; SM00181; EGF; 1.			
DR	SMART; SM00048; IgC2; 1.			
DR	PROSITE; PS00022; EGF; 1; 1.			
DR	PROSITE; PS00026; EGF-2; FALSE_NEG.			
KW	Growth factor; EGF-like domain; Immunoglobulin domain; Glycoprotein; Transmembrane; Alternative splicing.			
FT	CHAIN 1 602 NEUREGULIN-1.			
FT	CHAIN 1 205 NEUREGULIN-1.			
FT	DOMAIN 1 206 EXTRACELLULAR (POTENTIAL).			
FT	TRANSMEM 207 INTERNAL SIGNAL SEQUENCE (POTENTIAL).			
FT	DOMAIN 230 CYTOPLASMIC (POTENTIAL).			
FT	DOMAIN 42 112 Ig-LIKE C2-TYPE DOMAIN.			
FT	DOMAIN 125 136 SER/THR-RICH.			
FT	DOMAIN 137 181 EGF-LIKE.			
FT	DISULFID 49 105 BY SIMILARITY.			
FT	DISULFID 141 155 BY SIMILARITY.			
FT	DISULFID 149 169 BY SIMILARITY.			
FT	DISULFID 171 180 BY SIMILARITY.			
FT	CARBOHYD 21 21 N-LINKED (GLCNAC. . .) (POTENTIAL).			

Query	Match	Score	DB	Length
Best local Similarity	32.3%	Score	89.5;	DB 1;
Matches	40.5%	Pred. No.	0.00049;	Length 169;
17; Conservative	7;	Mismatches	15;	Indels 3;
Oy	5	Gaps	2;	
Db	68			
CSSDMNGYLL-GOCIYLVMD-SONYCRCVEGTGVRCHF 106				

RESULT 13
GRFA_SFVKA
ID_GRFASFVKA
NC_DOGA_P
STANDARD;
PRT; 80 AA.

RC_DOGANE_LV_N.G.
RC_TISSUE=EMBRYO;
RX_MEDLINE=93194170; PubMed=8449489;
RA_Franco Amo P., Gendron-Maguire M., Swiatek P.J., Jenkins N.A.,
Copeland N.G., Gridley T.;

DT 01-AUG-1988 (Rel. 08, Last created)
 DT 01-AUG-1988 (Rel. 08, Last sequence update)
 DT 01-FEB-1996 (Rel. 33, Last annotation update)
 DE GROWTH FACTOR.
 OS Shope fibroma virus (strain Kasza) ("SFV").
 OC viruses: dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
 OC Leporipoxvirus;
 OC NCBI_TAXID:10272;
 [1]
 RP SEQUENCE FROM N.A.
 RX MEDLINE:8717271; PubMed-3031480;
 RX MEDLINE:93048035; PubMed-1425352;
 RA Franco del Amo F., Smith D.E., Slaterek P.J., Gendron-Maguire M.,
 RA Greenspan R.J., McMahon A.P., Gridley T.;
 RT "Expression pattern of Notch, a mouse homolog of *Drosophila* Notch,
 RT suggests an important role in early postimplantation mouse
 RT development.",
 RT J. Cell. Biol. 119: 27-32 (1995).
 RT Genomics 15:259-264(1993).
 [2]
 RP SEQUENCE OF 1551-2170 FROM N.A.
 RC TISSUE-Embryo;
 RX MEDLINE:93048035; PubMed-1425352;
 RA Franco del Amo F., Smith D.E., Slaterek P.J., Gendron-Maguire M.,
 RA Greenspan R.J., McMahon A.P., Gridley T.;
 RT "Expression pattern of Notch, a mouse homolog of *Drosophila* Notch,
 RT suggests an important role in early postimplantation mouse
 RT development.",
 RT J. Cell. Biol. 119: 27-32 (1995).
 RT Genomics 15:259-264(1993).
 [2]

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DR PIR; A26723; EGVSOF1.
 DR InterPro; IPR00561; EGF-like.
 DR InterPro; IPR001336; EGF-1.
 DR PRINTS; SM00181; EGFTGF.
 DR SMART; SM00181; EGF-1.
 DR PROSITE; PS00022; EGF-1.
 DR PROSITE; PS01186; EGF-2; FALSE NEG.
 DR EGF-like domain; Growth factor; Glycoprotein.
 DR DOMAIN; 29 73 EGF-LIKE.
 DR F1FT; DISULFID; 33 47 BY SIMILARITY.
 DR F1FT; DISULFID; 41 61 BY SIMILARITY.
 DR F1FT; DISULFID; 63 72 BY SIMILARITY.
 DR F1FT; CARBOHYD; 44 44 N-LINKED (GLCNAC. . .) (POTENTIAL).
 DR F1FT; CARBOHYD; 54 54 N-LINKED (GLCNAC. . .) (POTENTIAL).
 DR SEQUENCE; 80 AA; 9210 MW; C4D30E878D2ED58 CRC64; DR EMBL; 211886; CAA77941.1; -.
 DR HSSP; P00740; 11XA.
 DR MGD; MGI; 97563; Notch1.
 DR InterPro; IPR002110; ANK.
 DR InterPro; IPR00152; ask_hydroxy1.
 DR InterPro; IPR000561; EGF-like.
 DR InterPro; IPR000742; EGF-2.
 DR InterPro; IPR00181; EGF-Ca.
 DR InterPro; IPR001438; EGF-II.
 DR InterPro; IPR000800; Notch.
 DR Pfam; PF00033; ank; 6.
 DR Pfam; PF00088; EGF; 35.
 DR Pfam; PF00066; notch; 3.
 DR PRINTS; SM00248; ANK; 3.

RESULT 14 KW mm transmembrane; Signal; Glycoprotein.

PT	CHAIN	19	2531	NEUROGENIC LOCUS NOTCH HOMOLOG PROTEIN 1.
PT	DOMAIN	19	1725	EXTRACELLULAR (POTENTIAL).
PT	TRANSMEM	1726	1746	POTENTIAL.
PT	DOMAIN	1747	2531	CYTOPLASMIC (POTENTIAL).
PT	DOMAIN	20	58	EGF-LIKE 1.
PT	DOMAIN	59	99	EGF-LIKE 2.
PT	DOMAIN	102	139	EGF-LIKE 3.
PT	DOMAIN	140	176	EGF-LIKE.
PT	DOMAIN	178	216	EGF-LIKE 5, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	218	255	EGF-LIKE 6.
PT	DOMAIN	257	293	EGF-LIKE 7, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	295	333	EGF-LIKE 8, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	335	371	EGF-LIKE 9, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	372	410	EGF-LIKE 10, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	412	450	EGF-LIKE 11, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	450	488	EGF-LIKE 12, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	490	526	EGF-LIKE 13, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	528	564	EGF-LIKE 14, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	566	601	EGF-LIKE 15, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	603	639	EGF-LIKE 16, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	641	676	EGF-LIKE 17, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	678	714	EGF-LIKE 18, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	716	751	EGF-LIKE 19, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	753	789	EGF-LIKE 20, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	791	827	EGF-LIKE 21, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	829	867	EGF-LIKE 22.
PT	DOMAIN	869	905	EGF-LIKE 23.
PT	DOMAIN	907	943	EGF-LIKE 24.
PT	DOMAIN	945	981	EGF-LIKE 25, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	1019	1057	EGF-LIKE 26.
PT	DOMAIN	1059	1095	EGF-LIKE 27, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	1097	1143	EGF-LIKE 28.
PT	DOMAIN	1145	1181	EGF-LIKE 29.
PT	DOMAIN	1183	1219	EGF-LIKE 30, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	1221	1255	EGF-LIKE 31, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	1267	1305	EGF-LIKE 32, CALCIUM-BINDING (POTENTIAL).
PT	DOMAIN	1307	1346	EGF-LIKE 33.
PT	DOMAIN	1348	1384	EGF-LIKE 34.
PT	DOMAIN	1387	1426	EGF-LIKE 35.
PT	DOMAIN	1449	1482	EGF-LIKE 36.
PT	REPEAT	1445	1480	CYS-RICH.
PT	REPEAT	1481	1522	LIN/NOTCH 1.
PT	REPEAT	1523	1562	LIN/NOTCH 2.
PT	REPEAT	1917	1947	LIN/NOTCH 3.
PT	REPEAT	1949	1979	ANK 1.
PT	REPEAT	1983	2012	ANK 2.
PT	REPEAT	2016	2045	ANK 3.
PT	REPEAT	2049	2078	ANK 4.
PT	REPEAT	24	37	ANK 5.
PT	DISULFID	31	46	BY SIMILARITY.
PT	DISULFID	63	74	BY SIMILARITY.
PT	DISULFID	68	87	BY SIMILARITY.
PT	DISULFID	89	98	BY SIMILARITY.
PT	DISULFID	106	117	BY SIMILARITY.
PT	DISULFID	111	127	BY SIMILARITY.
PT	DISULFID	129	138	BY SIMILARITY.
PT	DISULFID	144	155	BY SIMILARITY.
PT	DISULFID	149	164	BY SIMILARITY.
PT	DISULFID	166	175	BY SIMILARITY.
PT	DISULFID	182	195	BY SIMILARITY.
PT	DISULFID	189	204	BY SIMILARITY.
PT	DISULFID	206	215	BY SIMILARITY.
PT	DISULFID	222	233	BY SIMILARITY.
PT	DISULFID	227	243	BY SIMILARITY.
PT	DISULFID	245	254	BY SIMILARITY.
PT	DISULFID	261	272	BY SIMILARITY.
PT	DISULFID	266	281	BY SIMILARITY.
PT	DISULFID	283	292	BY SIMILARITY.
PT	DISULFID	299	312	BY SIMILARITY.
PT	DISULFID	305	321	BY SIMILARITY.
PT	DISULFID	323	332	BY SIMILARITY.
PT	DISULFID	330	350	BY SIMILARITY.
PT	DISULFID	344	359	BY SIMILARITY.
PT	DISULFID	361	370	BY SIMILARITY.
PT	DISULFID	376	387	BY SIMILARITY.
PT	DISULFID	381	398	BY SIMILARITY.
PT	DISULFID	400	409	BY SIMILARITY.
PT	DISULFID	416	429	BY SIMILARITY.
PT	DISULFID	423	438	BY SIMILARITY.
PT	DISULFID	440	449	BY SIMILARITY.
PT	DISULFID	456	467	BY SIMILARITY.
PT	DISULFID	461	476	BY SIMILARITY.
PT	DISULFID	478	487	BY SIMILARITY.
PT	DISULFID	494	505	BY SIMILARITY.
PT	DISULFID	499	514	BY SIMILARITY.
PT	DISULFID	516	525	BY SIMILARITY.
PT	DISULFID	532	543	BY SIMILARITY.
PT	DISULFID	537	552	BY SIMILARITY.
PT	DISULFID	554	563	BY SIMILARITY.
PT	DISULFID	570	580	BY SIMILARITY.
PT	DISULFID	575	589	BY SIMILARITY.
PT	DISULFID	591	600	BY SIMILARITY.
PT	DISULFID	607	618	BY SIMILARITY.
PT	DISULFID	612	627	BY SIMILARITY.
PT	DISULFID	629	638	BY SIMILARITY.
PT	DISULFID	645	655	BY SIMILARITY.
PT	DISULFID	650	664	BY SIMILARITY.
PT	DISULFID	666	675	BY SIMILARITY.
PT	DISULFID	682	693	BY SIMILARITY.
PT	DISULFID	687	702	BY SIMILARITY.
PT	DISULFID	704	713	BY SIMILARITY.
PT	DISULFID	720	730	BY SIMILARITY.
PT	DISULFID	725	739	BY SIMILARITY.
PT	DISULFID	741	750	BY SIMILARITY.
PT	DISULFID	757	768	BY SIMILARITY.
PT	DISULFID	762	776	BY SIMILARITY.
PT	DISULFID	777	788	BY SIMILARITY.
PT	DISULFID	779	788	BY SIMILARITY.
PT	DISULFID	795	806	BY SIMILARITY.
PT	DISULFID	800	815	BY SIMILARITY.
PT	DISULFID	817	826	BY SIMILARITY.
PT	DISULFID	833	844	BY SIMILARITY.
PT	DISULFID	838	855	BY SIMILARITY.
PT	DISULFID	857	866	BY SIMILARITY.
PT	DISULFID	873	884	BY SIMILARITY.
PT	DISULFID	878	893	BY SIMILARITY.
PT	DISULFID	895	904	BY SIMILARITY.
PT	DISULFID	911	922	BY SIMILARITY.
PT	DISULFID	916	931	BY SIMILARITY.
PT	DISULFID	933	942	BY SIMILARITY.
PT	DISULFID	987	998	BY SIMILARITY.
PT	DISULFID	992	1007	BY SIMILARITY.
PT	DISULFID	1009	1018	BY SIMILARITY.
PT	DISULFID	1025	1036	BY SIMILARITY.
PT	DISULFID	1045	1056	BY SIMILARITY.
PT	DISULFID	1047	1056	BY SIMILARITY.
PT	DISULFID	1063	1074	BY SIMILARITY.
PT	DISULFID	1068	1083	BY SIMILARITY.

Query Match 9 DLAACLNDGECFFVETLTQSHKICRCCKEGYQGRCD 41 0% Score 83; DB 1; Length 2531; PRT: 177 AA. Best Local Similarity 41.7%; Matches 15; Conservative 4; Mismatches 13; Indels 4; Gaps 1; ID: 1064 DSAFCKNGRCW---QINTQYHCECRSGWTGVNCD 1095

DE BTC-MOUSE

DE 005928; 01-FEB-1994 (Rel. 28, Created)

DE 01-FEB-1994 (Rel. 28, Last sequence update)

DE 20-AUG-2001 (Rel. 40, Last annotation update)

DE BETACELLULIN PRECURSOR (BTC)

RESULT 15

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OM protein - protein search, using sw model

Run on: February 7, 2002, 12:59:52 ; Search time 22.8 Seconds
(without alignments)
301.526 Million cell updates/sec

Title: US-09-480-977-4

Perfect score: 277

Sequence: 1 HFKCCKDKLAYCLNDGCF.....SHKKHCRCCKEGYQQVRCDOFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 473505 seqs., 146272329 residues

Total number of hits satisfying chosen parameters: 473505

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Listing first 45 summaries

Database : SPTREMBL_17:
1: sp_archea: *
2: sp_bacteria: *
3: sp_fungi: *
4: sp_human: *
5: sp_invertebrate: *
6: sp_mammal: *
7: sp_mhc: *
8: sp_orangutan: *
9: sp_phage: *
10: sp_plant: *
11: sp_reptile: *
12: sp_virus: *
13: sp_vertebrate: *
14: sp_unclassified: *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match Length	DB ID	Description
1	113.5	41.0	461_11_035947	035947 mesocricetus
2	111.5	40.3	298_11_09E8A9	09e8a9 rattus norv
3	111.5	40.3	695_11_09E8B0	09e8b0 rattus norv
4	104.5	37.7	007112_bos_taurus	007112_bos_taurus
5	37.0	111	09E8A8	09e8a8 rattus norv
6	102.5	37.0	136_11_09E8A7	09e8a7 rattus norv
7	102.5	37.0	256_11_09E8A6	09e8a6 rattus norv
8	102.5	37.0	317_11_09E8A3	09e8a3 rattus norv
9	102.5	37.0	323_11_09E8A2	09e8a2 rattus norv
10	102.5	37.0	342_11_09E8A1	09e8a1 rattus norv
11	102.5	37.0	700_11_09E8B1	09e8b1 rattus norv
12	102.5	37.0	782_11_09E8A5	09e8a5 rattus norv
13	92.5	33.4	2180_5_001768	001768_cocnorhabdi
14	89	162_11_092015	092015_rattus_norv	
15	89	32_1_09URK5	09URK5_homo_sapien	
16	89	32_1_09URKD4	09URKD4_homo_sapien	
17	89	32_1_09B2V3	09B2V3_homo_sapien	
18	88	31_8_1_P70628	P70628_rattus_norv	
19	87	217_5_Q9VVJ6	Q9VVJ6_drosophila	

RESULT	1	ALIGNMENTS
035947	PRELIMINARY;	
035947	ID: 035947; AC: 035947;	PRT: 461 AA.
	DT: 01-JAN-1998 (TREMBBL_05, Created)	
	DT: 01-JUN-2001 (TREMBBL_17, Last annotation update)	
	DE: PRO-NEUREGULIN-1, ISOFORM ALPHA 2B PRECURSOR.	
	GN: NRG1 OR NDF.	
	OS: Mesocricetus auratus (Golden hamster).	
	OC: Bokanyota; Metazoa; Chordata; Craniota; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae; Mesorectetus.	
	OX: NCBI-TAXID=10036;	
	RN: [1]	
	RP: SEQUENCE FROM N.A. (ISOFORM ALPHA2B), AND SEQUENCE OF 64-81.	
	RC: TISSUE-EMBRYO; PUBMED=9537646;	
	RA: MEDLINE=98196396; Velsco J.A., Feijoo E., Avila M.A., Notario V.;	
	RT: "Secretion of neu differentiation factor-like polypeptides by cph-transformed fibroblasts: cloning and characterization of Syrian hamster neurogulin cDNAs."	
	RT: Mol. Carcinog. 21:156-163(1998).	
	RL: CC	
	-1- FUNCTION: DIRECT LIGAND FOR ERBB3 AND ERBB4 TYROSINE KINASE RECEPTORS CONCOMITANTLY RECRUITS ERBB1 AND ERBB2 CORRECEPTORS, RESULTING IN LIGAND-SIMULATED TYROSINE PHOSPHORYLATION AND ACTIVATION OF THE ERBB RECEPTORS. MAY PLAY AN IMPORTANT ROLE IN PROVIDING GROWTH ADVANTAGE IN NEOPLASTIC CELLS.	
	-1- SUBUNIT: THE CYTOSLIC DOMAIN INTERACTS WITH THE LIM DOMAIN REGION OF LIMK1 (BY SIMILARITY).	
	-1- SUBCELLULAR LOCATION: EXISTS AS TYPE I MEMBRANE PROTEIN AND AS A PROTEOLYTICALLY RELEASED SOLUBLE GROWTH FACTOR FORM. THE MEMBRANE-BOUND FORM DOES NOT SEEM TO BE ACTIVE (BY SIMILARITY).	
	-1- ALTERNATIVE PRODUCTS: DIFFERENT ISOFORMS ARE PRODUCED BY ALTERNATIVE SPLICING. THE SEQUENCE SHOWN IS THAT OF ISOFORM ALPHAB2B/CLONE PM3.	
	-1- TISSUE SPECIFICITY: EXPRESSED AT HIGHER LEVEL AFTER NEOPLASTIC TRANSFORMATION OF CELLS.	
	-1- DOMAIN: THE CITOPLASMIC DOMAIN MAY BE INVOLVED IN THE REGULATION OF TRAFFICKING AND PROTEOLYTIC PROCESSING. REGULATION OF THE PROTEOLYTIC PROCESSING INVOLVES INITIAL INTRACELLULAR DOMAIN DIMERIZATION (BY SIMILARITY).	

RESULT	10	1	HFPKPCRKDKLAVCLNDGECFVLTLSHHK-CRCKEGYQYGRCDQFL	47
OPESEL		PRELIMINARY;	PRT;	342 AA.
ID	09ESAI;			
AC	09ESAI;			
DT	01-MAR-2001 (TREMBLEL, 16, Created)			
DT	01-MAR-2001 (TREMBLEL, 16, Last sequence update)			
DT	01-JUN-2001 (TREMBLEL, 17, Last annotation update)			
DE	GIAL GROWTH FACTOR GGF BETA 4 (FRAGMENT).			
NRG1				
OS	Rattus norvegicus (Rat).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.			
OX	NCBI_TAXID=10116;			
RN	[1]			
RP	SEQUENCE FROM N_A.			
RC	STRAIN-SPRAGUE-DWALEY;			
RC	TISSUE-AXONOMIZED LUMBAR DORSAL ROOT GANGLION/SPINAL CORD;			
RA	Carroll S.L., Stoneycpher M.S., Anderson K.D., Pearson R.J. Jr., Frohner P.W.			
RT	Structural and Functional Diversity of Glial Growth Factor Isoforms Expressed in Regenerating Peripheral Nerve and Associated Neurons.;			
RT	Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.			
RT	-1- SIMILARITY: TO IMMUNOGLOBULIN AND MAJOR HISTOCOMPATIBILITY COMPLEX			
CC	DOMAIN.			
DR	EMBL: AF194997; AAC28451.1; -.			
DR	InterPro; IPR00561; EGF-like.			
DR	InterPro; IPR00599; Ig.			
DR	InterPro; IPR003598; Ig_c2.			
DR	InterPro; IPR00006; Ig_MHC.			
DR	Pfam; PF00008; EGF.			
DR	Pfam; PF00047; Ig.			
DR	SMART; SM00181; EGF; 1.			
DR	SMART; SM00001; EGF-like; 1.			
DR	SMART; SM00409; Ig; 1.			
DR	SMART; SM00408; IgC2; 1.			
DR	PROSITE; PS00022; EGF-1; UNKNOWN_1.			
FT	NON_TER 1 1			
FT	NON_TER 342 342			
FT	SEQUENCE 342 AA; 37836 MW; 8BE36FC836553124 CRC64;			
Query Match	37.0%	Score 102.5;	DB 11;	Length 700;
Best Local Similarity	31.2%	Pred. No. 1.4e-05;	Mismatches 19;	Indels 1; Gaps 1;
Matches	15;	Conservative 13;	Mismatches 19;	Indels 1; Gaps 1;
RESULT	12	1	HFPKPCRKDKLAVCLNDGECFVLTLSHHK-CRCKEGYQYGRCDQFL	47
O9ESAI		PRELIMINARY;	PRT;	782 AA.
ID	09ESAI;			
AC	09ESAI;			
DT	01-MAR-2001 (TREMBLEL, 16, Last sequence update)			
DT	01-JUN-2001 (TREMBLEL, 17, Last annotation update)			
DE	GIAL GROWTH FACTOR BETA 1A (FRAGMENT).			
GN	NRG1.			
OS	Rattus norvegicus (Rat).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.			
OX	NCBI_TAXID=10116;			
RN	[1]			
RP	SEQUENCE FROM N_A.			
RC	STRAIN-SPRAGUE-DWALEY; TISSUE-SPINAL CORD/BRAIN STEM;			
RA	Carroll S.L., Stoneycpher M.S., Anderson K.D., Pearson R.J. Jr., Frohner P.W.			
RT	Structural and Functional Diversity of Glial Growth Factor Isoforms Expressed in Regenerating Peripheral Nerve and Associated Neurons.;			
RT	Submitted (OCT-1999) to the EMBL/GenBank/DBJ databases.			
CC	DOMAIN.			
DR	EMBL: AF194993; AAC28433.1; -.			
DR	InterPro; IPR00561; EGF-like.			
DR	InterPro; IPR003598; Ig.			
DR	InterPro; IPR00306; Ig_MHC.			
DR	InterPro; IPR02154; Neuregulin.			
DR	InterPro; IPR02114; PTS_HPR_ser.			
DR	Pfam; PF00008; EGF; 1.			
DR	Pfam; PF00047; Ig; 1.			
DR	SMART; SM00181; EGF; 1.			
DR	SMART; SM00001; EGF-like; 1.			
DR	SMART; SM00409; Ig; 1.			
DR	SMART; SM00408; IgC2; 1.			
DR	PROSITE; PS00022; EGF-1; UNKNOWN_1.			
FT	NON_TER 1 1			
FT	SEQUENCE 782 AA; 86036 MW; F617A68FAE27BDE CRC64;			
Query Match	37.0%	Score 102.5;	DB 11;	Length 782;
Best Local Similarity	31.2%	Pred. No. 1.6e-05;	Mismatches 19;	Indels 1; Gaps 1;
Matches	15;	Conservative 13;	Mismatches 19;	Indels 1; Gaps 1;

RESULT	13	PRELIMINARY;	PRT;	2180 AA.
ID	001768			
AC	001768;	PRELIMINARY;	PRT;	2180 AA.
DT	01-JUL-1997 (TREMBLEL_04; Last sequence update)			
DT	01-JUN-2001 (TREMBLEL_17; Last annotation update)			
DE	HYPOTHETICAL 241.7 KDA PROTEIN T21E3.3 IN CHROMOSOME 1.			
GN	T21E3.3			
OS	Caenorhabditis elegans.			
OC	Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidae;			
OC	Rhabditidae; Peioderinae; Caenorhabditis.			
OX	NCBI_TaxID=6239;			
RN	[1] SEQUENCE FROM N.A.			
RP	Caenorhabditis elegans.			
RC	Strain=BRISTOL_N2;			
RA	Du Z.; Le T.;			
RL	Submitted (May-1997) to the EMBL/GenBank/DBJ databases.			
CC	-1- SIMILARITY: TO LOW DENSITY LIPOPROTEIN (LDL) RECEPTOR CLASS A (LDRA) DOMAIN.			
CC	EMBL: AF00133; ARB54138; 1; -.			
CC	HSPL: Q07954; ICR8.			
DR	InterPro: IPR000561; EGF-like.			
DR	InterPro: IPR02049; Laminin_EGF.			
DR	InterPro: IPR00033; Ldlr_receptor_rep.			
DR	InterPro: IPR002172; LDL_recept_A.			
DR	Pfam: PF0008; EGF; 9.			
DR	Pfam: PF00057; Ldlr_recept_a; 18.			
DR	Pfam: PF00058; Ldl_recept_b; 8.			
DR	PRINTS: PRO001; LDLRECEPTOR.			
DR	SMART: SM00181; EGF; 10.			
DR	SMART: SM00192; Ldlr; 20.			
DR	SMART: SM00135; LY; 7.			
DR	PROSITE: PS00022; EGF_1; UNKNOWN_9.			
DR	PROSITE: PS01166; EGF_2; 7.			
DR	PROSITE: PS01209; LDRA_1; 10.			
DR	PROSITE: PS00068; LDRA_2; 21.			
KW	EGF-like domain; Glycoprotein; Hypothetical protein.			
SQ	SEQUENCE FROM 2180 AA; 241705 MW; C26419F456A60013 CRC64;			
Query Match	33.4%; Score 92.5; DB 5; Length 2180;			
Best Local Similarity	42.9%; Pred. No. 0 00092; Mismatches 7; Indels 9; Gaps 3;			
Matches	18; Conservative 8; Mismatches 7; Indels 9; Gaps 3;			
QY	5 CRDKLAVCLNDEGCFVIEITL-GSHKHCKRKEGYGCVRCQ 45			
DB	1906 CDD---YCTNNNSC---TTINGTHFECCKPGFKGLRCQ 1939			
RESULT	14	PRELIMINARY;	PRT;	162 AA.
Q90L5	PRELIMINARY;	PRT;	162 AA.	
ID	Q90L5			
AC	Q90L5;	PRELIMINARY;	PRT;	162 AA.
DT	01-MAY-1999 (TREMBLEL_10; Created)			
DT	01-MAY-1999 (TREMBLEL_10; Last sequence update)			
DT	01-JUN-2001 (TREMBLEL_17; Last annotation update)			
DE	EPIREGULIN PRECURSOR.			
OS	Rattus norvegicus (Rat).			
OC	Mammalia; Chordata; Craniata; Vertebrata; Euteleostomi; Osteichthyes; Eutheria; Rodentia; Sciurognathii; Muridae; Murinae; Rattus.			
OX	NCBI_TaxID=10116;			
RN	[1] SEQUENCE FROM N.A.			
RP	SEQUENCE FROM N.A., SEQUENCE OF 56-75, AND CHARACTERIZATION.			
RC	TISSUE-AORTIC SMOOTH MUSCLE;			
RX	MEDLINE-99145629; PubMed-990076;			
RA	Taylor D.S., Cheng X., Pawlowski J.E., Wallace A.R., Ferrer P.,			
RA	Best Local Similarity 34.6%; Pred. No. 0 0016; Length 1241;			
Query Match	32.1%; Score 89; DB 4; Length 1241;			

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us-09-480-977-4.rspt

Page 7

Matches 18; Conservative 11; Mismatches 13; Indels 10; Gaps 3;
Qy 3 KPCR--DKDLYCLNIDGECVIETTGSHKHCRKEG---YQVRCDOFL 47
Db 1048 RRCQSLCLDQDFCLNDGKC---DIMPCHGAIICRPGENWWYRCKHCEFLV 1096

search completed: February 7, 2002, 13:03:00
Job time: 108 sec